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# **Buying the C-17 A Case Study**

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## **BUYING THE C-17 A CASE STUDY**

**by**  
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### **ABSTRACT**

On April 29, 1993, Secretary of Defense Les Aspin fired three Air Force general officers and one senior civilian for mismanagement of the C-17 cargo aircraft program in 1990. The basis of his decision was a Department of Defense Inspector General Report which alleged management improprieties and criminal wrong doing. Although an Air Force legal review found the IG charges to be without merit and not supported in fact, Mr Aspin rejected those findings. This case examines the issues and environment surrounding those decisions and explores the politics behind them. It also highlights the history of the C-17, the roles a changing world order and senior OSD policy makers played in its dramatic struggle for survival, and the challenges military program officials faced during the fall of 1990 as they struggled to balance the overwhelming political, economic, and operational constraints driving the design, development and fielding of the nation's newest strategic airlifter.

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*"Public management in the American system is characterized by fragmentation and diffusion of authority, responsibility that far exceeds control, the need to be responsive to many public and political pressures, and accountability to multiple sources of oversight."<sup>1</sup>*

### **INTRODUCTION**

On the morning of April 29, 1993, Secretary of Defense (SECDEF) Les Aspin sent shock waves through DOD's procurement community, firing the former C-17 Program Manager and disciplining three others for management decisions made during the fall of 1990. Saying his actions were taken "...to strengthen the acquisition system and to encourage its efficient operations," Mr Aspin based his decision upon the findings and recommendations contained in a Department of Defense (DOD) Inspector General (IG) report - *Government*

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<sup>1</sup> Martin Linsky, Impact, How the Press Affects Federal Policymaking, (New York: W.W. Norton & Co., 1986), p. 11.

***Actions Concerning McDonnell Douglas Corporation Financial Condition  
During 1990.<sup>2</sup>***

Ordered by long time program critic, Congressman John Conyers of Michigan, the January 14, 1993 report painted a sordid picture of deception and deceit, charging five Air Force officials prematurely advanced nearly \$500 million in progress payments and secretly engaged in a concerted effort to financially "bailout" the C-17 program and the nation's largest defense contractor, McDonnell Douglas (MDC)<sup>3,4</sup>. While the SECDEF said he believed no criminal conduct was involved, he rejected the findings of an independent Air Force review which concluded program officials acted well "...within a

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<sup>2</sup> Secretary of Defense Les Aspin, Memorandum for the Acting Secretary of the Air Force, "Air Force Review of the DOD Inspector General Report on the C-17 Aircraft (January 14, 1993)," April 29, 1993.

<sup>3</sup> The individuals identified and recommended for disciplinary action by the IG were former C-17 System Program Director (SPD) - Major General Michael Butchko, former Air Force Program Executive Officer (PEO) for Tactical and Airlift Programs - Lieutenant General Edward Barry, former Air Force Systems Command Deputy Chief of Staff Comptroller - Brigadier General John Nauseef, former Air Force Systems Command Principle Assistant to the Deputy Chief of Staff - Ms Darleen Druyun, and former C-17 Deputy Director of Contracting - Mr Albert Hixenbaugh. The IG also named Mr Jack Welch, the former Assistant Secretary of the Air Force for Acquisition (ASAF(A)). As a political appointee, Mr Welch left government service in late 1992 at the conclusion of the Bush administration. The IG did not make any recommendations for disciplinary action against Mr Welch.

<sup>4</sup> "Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990," Department of Defense, Office of the Inspector General, January 1993, pp. i-iii.

*range of acceptable management discretion*" and past program decisions were made with the full knowledge and concurrence of the Office of the Secretary of Defense (OSD).<sup>5,6</sup>

Citing instead "...*the need for accountability at all levels*" and an "...*unwillingness on the part of some high ranking acquisition professionals to acknowledge program difficulties and to take decisive action*," Mr Aspin formally concluded in a terse memo to Acting Air Force Secretary Michael Donley he had lost confidence that four of the five former program officials could remain effective in defense acquisition.<sup>7</sup> Coming on the eve of scheduled Congressional C-17 hearings and just a week after the Air Force review recommended "...*no disciplinary action was warranted...and no further administrative action appropriate*," the SECDEF's actions were viewed by many as merely the latest attempt to mollify Congress and to shape the dynamic

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<sup>5</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Memorandum from Reviewing Official, p. 4.

<sup>6</sup> Approximately 30 days after the IG report was released, Mr Aspin directed the Air Force to conduct a review of the IG's administrative inquiry.

<sup>7</sup> Secretary of Defense Les Aspin, Memorandum for the Acting Secretary of the Air Force, "Air Force Review of the DOD Inspector General Report on the C-17 Aircraft (January 14, 1993)," April 29, 1993.

environment which has surrounded the program since its inception.<sup>8</sup>

Begun in late 1970s as a low risk low cost venture, the C-17 has emerged today as one of DOD's most controversial programs. During its long fifteen year journey from concept development to operational deployment, the \$40 billion airlifter has been buffeted by a series of powerful and often conflicting forces. This is the story of the C-17 and its antecedents, the roles a changing world order and senior OSD policy makers played in its dramatic struggle for survival, and the challenges military program officials faced during the fall of 1990 as they struggled to balance the overwhelming political, economic, and operational constraints driving the design, development and fielding of the nation's newest strategic airlifter.

## **1979: PROGRAM INITIATION**

During the fall of 1979, DOD began to lay the groundwork for the Air Force's next generation of strategic airlifter. Moving in response to rising US concerns over Persian Gulf instability, vulnerability of the world's oil supplies, and increasing lift demands of the newly formed Rapid Deployment Force, a multi-service task force led by the Air Force met to define airlift requirements

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<sup>8</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Memorandum from Reviewing Official, p. 4.

for a new cargo plane, the C-X or Cargo Experimental (Atch 1).<sup>9</sup> The C-X was envisioned as a highly responsive multi-role vehicle capable of meeting growing US strategic and tactical mobility needs, as well as providing inter-continental direct point-to-point airland and airdrop of personnel and heavy outsized cargo to relatively short austere landing fields.<sup>10</sup>

In its joint requirements role, the C-X task force looked at operational gaps that existed in both strategic and tactical lift capability, evaluated current limitations of C-141 and C-5 aircraft, and reviewed the cargo capacity and platform utility of all existing military and commercial airframes. The study group also considered the possibility of re-opening the former C-5 production line and the potential of purchasing and modifying surplus Boeing 747s, but concluded neither of these options nor any of the other aircraft considered would

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<sup>9</sup> The multi-service task force, made up almost exclusively of Air Force and Army personnel, established a series of objective and threshold (minimum) requirements for the C-X (Atch 1). Of primary importance was air vehicle range, payload, and ground maneuverability. Particular emphasis was also placed on the requirement for a combat loaded C-X to conduct operations from a 3,000 foot unimproved runway. A short field capability would give the Services immediate access to over 10,000 world-wide landing strips.

<sup>10</sup> During the late 70's and early 80's, the Army began investing heavily in new land combat vehicles and heavy equipment to counter the growing numerical superiority of Soviet and Warsaw Pact forces. In this new class of vehicles are the M1A1 70-ton Abrams tank, Bradley Armored Personnel Carrier, and the High Mobility Multi-Purpose Wheeled Vehicle - HMMWV. The Army's force modernization effort and the need to be able to rapidly reinforce U.S. and Nato Forces in Europe were the primary factors in the requirement for a heavy lift intra-theater aircraft with a large rear cargo door (height and width openings larger than the C-130 and C-141).

satisfy the Service's basic threshold requirement for long range intra-theater delivery of heavy outsized cargo into short remote unimproved airfields.

With this analysis in hand and pressure from international events building, the C-X program was formally initiated in December 1979 with the release of a Program Management Directive (PMD). The PMD instructed the Air Force to proceed directly to Full Scale Engineering Development (FSED), use existing technology to mitigate risk, and achieve a not later than FY87 Initial Operating Capability (IOC).<sup>11</sup>

While skipping the Demonstration - Validation (Dem/Val) phase of the acquisition cycle was considered risky and somewhat unusual for a development program of this size, DOD's direction to use only existing technologies and the aircraft industry's recent success in developing Advanced Medium Short Takeoff/Landing Transport (AMST) prototypes for the Air Force tempered many of these concerns. The AMST program, conceived as a tactical airlift follow-on to the C-130 Hercules, had successfully validated several state-of-the-art Short-field Take-Off and Landing (STOL) technologies and demonstrated many of the C-X's proposed operational concepts for the forward delivery of outsized cargo. The combined results of the AMST test aircraft with other proven technologies

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<sup>11</sup> Initial Operating Capability (IOC) was defined as a fully deployed operational squadron of 12 aircraft with its associated spares and training and support equipment.

such as blown flaps, winglets, electronic flight controls, and heads-up displays, provided the program with a comprehensive technical baseline and an opportunity to selectively integrate those key items which could most efficiently and effectively improve flying qualities, expand access to unimproved airfields, and offer significant performance increases over the older C-141 and C-5 transports now in use.<sup>12</sup>

Confidence in these existing technologies also served to bolster the evolving C-X program strategy which included the use of Fixed Price Incentive (FPI) contracts for FSED and the first production option, and the use of Firm Fixed Price (FFP) contracts for subsequent production options.<sup>13</sup> While this approach placed more risk on the contractor than a cost type contract, it was considered appropriate given the design philosophy and the mature military and commercial technologies now under consideration.<sup>14, 15</sup> To ensure government

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<sup>12</sup> Bruce A. Smith, "Management Miscues, Delays Snarl C-17 Program," Aviation Week and Space Technology, April 12, 1993, p. 30.

<sup>13</sup> Air Force Institute of Technology, "C-17, A Case Study Prepared by AFIT/LSP," Background by Colonel David L. Mastin, January 1994, Section B, p. 2.

<sup>14</sup> Ibid.

<sup>15</sup> During the early 80's a great emphasis was placed on the use of fixed priced contracts. The general consensus at this time was that fixed priced contracts would limit the government's financial exposure and lower the risk of cost overruns which had historically permeated the weapons procurement process.

contractors fully understood DOD's commitment to a low risk low cost effort, the January 1981 Request For Proposal (RFP) cover letter specifically stated that "*...undo complexity or technical risk will be regarded as poor design.*"<sup>16</sup> Even so, according a program status memo provided to the Commander in Chief, Military Airlift Command (CINCMAC) during proposal preparation, Lockheed questioned the use of a FFP contract based on its own assessment of the development risk inherent in the program.<sup>17</sup>

Responding to the Air Force's RFP request were three major aircraft developers; Lockheed, Douglas, and Boeing. And in August 1981, some 19 months after the original PMD was signed, Douglas Aircraft Company (DAC) was announced as the C-X source selection winner. DAC's winning design, a highly automated fly-by-wire, four engine wide-body jet aircraft, stayed well within the technical risk and design constraints, and built upon the lessons learned from their earlier YC-15 AMST prototype (Atch 2).<sup>18</sup> Douglas's

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<sup>16</sup> CINCMAC/CS-CX Staff Summary Sheet, Subject: Contracting for the C-X Program (CSD #24661), September 29, 1980, p. 1., as cited in Air Force Institute of Technology, "C-17, A Case Study Prepared by AFIT/LSP," Background by Colonel David L. Mastin, January 1994, Section B, p. 2.

<sup>17</sup> Air Force Institute of Technology, "C-17, A Case Study Prepared by AFIT/LSP," Background by Colonel David L. Mastin, January 1994, Section B, p. 2.

<sup>18</sup> William B. Scott, "C-17 First Flight Triggers Douglas / Air Force Test Program," Aviation Week and Space Technology, September 23, 1991, p. 21.

victory, however, would be short lived as the first in a series of significant world events and Congressional funding adjustments would take hold, radically reshaping the future of the program and fundamentally changing the strategic airlift equation.

### **1981 - 1984: REDEFINING STRATEGIC MOBILITY**

While the Air Force was working to gain approval of its new airlifter, the Soviet invasion of Afghanistan and Iranian Hostage Crisis soon took control of the strategic mobility debate now underway in Congress. Soviet and Iranian actions and a newly completed Congressionally Mandated Mobility Study (CMMS) had heightened concerns among the Services and Congress over the near term strategic air and sea lift shortfall. DOD, as part of the CMMS, had established a goal of being able to airlift 66 million ton-miles of cargo per day.<sup>19</sup> At that time, the Air Force's long range capability was approximately 29 million and given the current C-X development schedule it would be some ten years before the C-X could begin to significantly help improve this situation.<sup>20</sup>

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<sup>19</sup> A ton mile refers to the airlift capacity need to move one ton of cargo a distance of one mile.

<sup>20</sup> U. S. General Accounting Office, "Military Airlift, Cost and Complexity of the C-17 Aircraft Research and Development Program," March 1991, p. 8.

Politics, however, soon overtook the strategic lift debate. Both Lockheed and Boeing, sensing an opportunity to quickly fill the 37-ton "gap" and recover from their recent defeat in the C-X competition, offered DOD unsolicited proposals promising affordable and rapid delivery of active and proven aircraft. Boeing claimed it could meet DOD's needs by modifying 64 existing 747s, while Lockheed offered to restart their C-5 production line and build 50 more aircraft. Both companies mounted ferocious lobbying campaigns, and in January 1982 Lockheed's efforts paid off as DOD awarded them a contract for 50 new C-5Bs, a modified version of their earlier C-5A.<sup>21</sup> Although DOD's decision to buy more C-5s clearly placed the future of the C-X in doubt, Douglas and its parent corporation MDC did gain some relief as Air Force funding priorities also shifted to include the purchase of 44 new DAC KC-10 tanker aircraft.<sup>22</sup>

Despite the interim airlift solutions and related C-5 and KC-10 decisions, the basic requirement for the C-X, now designated the C-17, and its promised operational capabilities still remained. Although unable to afford a full development program, both the Office of the Secretary of Defense (OSD) and

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<sup>21</sup> Schuyler Houser, "The Congressionally Mandated Mobility Study," John F. Kennedy School of Government, Harvard University, 1987, pp. 16-17.

<sup>22</sup> The KC-10 is a modified version of DAC's DC-10 commercial aircraft, designed for use both as a tanker and a cargo transport.

the Air Force decided to continue with the program, but at a dramatically reduced level. On July 23, 1982, nearly a year after DAC had won the original competition, a limited \$31.6 million FPI FSED contract was awarded. This 15 month modestly paced research and development contract was a far cry from what had originally been envisioned, but it did contain a clause permitting the Air Force to restructure the effort should a full funding decision be granted.<sup>23</sup> In concert with the contract release, the Air Force continued working the normal operational requirements review process and subsequently issued a revised PMD in July 1983 directing the continuation of C-17 design effort and the initiation of activities leading to a full FSED start by FY85, a FY88 production start, and an FY92 IOC should funding warrant.<sup>24</sup>

## **1985: PROGRAM RESTRUCTURE**

On February 15, 1985, the formal decision to fully fund the C-17 program was made.<sup>25</sup> Following SECDEF approval of an FSED start, the Air Force C-17

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<sup>23</sup> During this initial contract period, basic C-17 engineering design work was completed, including wind tunnel testing, structural design and analysis, and vendor evaluation studies.

<sup>24</sup> "Selected Acquisition Report for the C-17A," June 30, 1990, p. 3.

<sup>25</sup> Secretary of Defense Casper Weinberger, Memorandum for the Secretary of the Air Force, "C-17 Full Scale Engineering Development (FSED)," February 15, 1985, p. 1.

System Program Office (SPO) and Douglas Aircraft completed contract negotiations in October and on December 31 a restructured Fixed Price Incentive Fee (FPIF) contract was issued. Crafted as a success oriented schedule driven agreement, the \$3.4 billion FSED effort called for the design, development, fabrication, and test of one flight test aircraft (T-1) within 18 months (July 1987) and the delivery of two ground test aircraft, one for static loads testing and a second for durability testing, shortly thereafter.<sup>26</sup> The contract also included separately priced options for the first two lots of Low Rate Initial Production (LRIP) aircraft, with the first LRIP aircraft (P-1) due 34 months after T-1.

The FPIF contract specified a 80/20 share ratio, 130% ceiling price, flexible progress payments, and separate Contract Line Item Numbers (CLINs) which were incrementally funded on an annual basis.<sup>27</sup> To ensure proper

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<sup>26</sup> U. S. General Accounting Office, "Military Airlift, Cost and Complexity of the C-17 Aircraft Research and Development Program," March 1991, p. 11.

<sup>27</sup> The contract also contained a special Limitation of Government Obligation (LOGO) clause which established a FSED funding plan and profile. The clause specified exactly how much and how often DAC would be paid during the fiscal year. Production CLINs, however, were funded differently. Because they were paid for with aircraft procurement rather than RDT&E dollars, they were fully funded at the time the production option was exercised. Full funding on this contract meant the government would obligate funds to the contract up to the contract target price.

LtCol David Mastin, "C-17 Issues and Concerns," ICAF Executive Research Project, 1993, pg. 13.

segregation of FSED and production work for payment purposes, the contract also contained a special segregation of costs provision which stipulated when LRIP options 1 and 2 were exercised in FY 88 and FY89 respectively, they would be incorporated into the overall FSED contract ceiling price. The idea behind the unique "merging" of cost accounts was to allow DAC to spread their financial risk across the life the contract. Although production funds and FSED funds were to remain segregated, a single contract ceiling allowed DAC to use an underrun in one area to offset an overrun in another area, thus staying below the contract's total ceiling price.

#### **1986 - 1987: VOIDS IN THE WORKFORCE**

While contract restructuring and full FSED start-up had gone quite smoothly, the nearly four year delay between source selection and the decision to go to full FSED left large voids in DAC's workforce. Many of DAC's more highly skilled managers, engineers, and production workers had departed the program or the company in response to a sharp industry surge in both military and commercial programs. Their departure and the aircraft industry's growing demand for qualified workers made it difficult to find employees with the required skill levels and experience. As a result, DAC quickly fell behind in a

number of key engineering design and integration areas. According to LtCol Greg Lockhart who was assigned to the Air Force Plant Representative Office (AFPRO) at DAC's Long Beach, California production facility during this period;

*"Douglas was having a terrible time trying to acquire the talent necessary to design and build the airplane, and it was really hurting the program. By the time the July 1987 original T-1 delivery milestone passed, the program probably had less than 50 percent of its engineering drawings complete and was nearly 18 months behind schedule. This was a direct result of not having the right people on-board and we knew this problem would haunt us throughout FSED."<sup>28</sup>*

Douglas, however, was not alone in their attempt to gain workforce and schedule stability. The Air Force C-17 SPO located at Wright Patterson Air Force Base in Dayton, Ohio, was also experiencing a significant turnover of System Program Directors (SPD). When Brigader General Michael Butchko was assigned to take the SPO director's chair on August 10, 1987, he was the

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<sup>28</sup> LtCol Lockhart was associated with the C-17 program for nearly eight years from 1986 to 1994. He served first as a C-17 action officer at the AFPRO, then as the C-17 System Officer (SYSTO) at Air Force Systems Command Headquarters, and finally as the C-17 Program Element Monitor (PEM) at the Pentagon.

Interview with LtCol Greg Lockhart, National Defense University - Industrial College of the Armed Forces, Ft McNair, Washington D.C., January 1995.

fourth person to do so in less than 18 months.<sup>29</sup><sup>30</sup> Arriving shortly after the program missed its July T-1 delivery date, he found a contractor struggling to make technical progress, long lead production funding for the first two aircraft already on contract, and a schedule driven contract with expiring fixed priced annual production options committing the government to premature long lead and LRIP decisions. With two more January 1988 contract options fast approaching, one for the purchase of the first two LRIP aircraft and a second to buy long lead parts for Lot 2 LRIP aircraft, General Butchko realized he needed to significantly restructure the contract to regain control of the program.<sup>31</sup><sup>32</sup>

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<sup>29</sup> Prior to General Butchko's arrival, the program had been led first by Major General Harbor who served from mid 1983 until early 1986. He was then followed by Colonels Stover and Stone who each spent only a few months directing the program.

<sup>30</sup> General Butchko came to the C-17 program with an extensive background in operations, flight test, and acquisition. Prior to his arrival he had been the F-15 SPD and the B-1B Deputy SPD, spent two tours as a test pilot, served as a Program Element Monitor, and spent over 10 years in flight operation.

<sup>31</sup> Shortly after the 31 December 1985 start of full FSED, the Air Force began holding a series of scheduled annual reviews to certify DAC's ability to transition from full scale development to production. In May 1986, 5 months after the FSED contract was signed, the first Production Readiness Review (PRR) was conducted and it was determined DAC was proceeding on-schedule. The Air Force's Contract Management Command conducted a Contractor Operations Review in September 1986 to evaluate DAC's product integrity; it was rated "best yet" of any manufacturer reviewed. The results of these reviews were briefed to OSD on 18 November 1986 and the SPO then exercised a \$2.3 Billion option for 5 years of follow-on FSED with DAC. A second PRR was conducted a year later in July 1987 and even though DAC had missed its T-1 delivery milestone, the PRR assessed the C-17 as "Ready for Production."

"Selected Acquisition Report for the C-17A," June 30, 1990, p. 3.

## 1988: EVENT "COMPLETE" CONTRACT

In January 1988, with major delays in the T-1 delivery schedule now making headlines and cuts occurring in Research, Development, Test & Evaluation (RDT&E) funding due to overall DOD budget reductions, General Butchko moved to bring the program more in line with the actual progress being made. To challenge DAC to control costs and maintain schedule, the FSED delivery schedule for T-1 was reset to August 1990 and an "event complete" clause was placed on contract in November 1988.<sup>33</sup> This contract modification, one of the first of its kind, dramatically changed the entire program structure. From now on all future FY89-FY92 LRIP contract funding decisions would be

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<sup>32</sup> Although the FSED portion of the program was clearly behind, DAC and the SPO continued to hold scheduled production readiness review (PRR) meetings. During the early days of the program, the SPO and DAC saw completion of these calendar driven events as critical to its survival. Contractually, they were required in order for the SPO to exercise the annual FPI options for long lead and LRIP which came up for consideration each January. If the Air Force had unilaterally slipped the PRR's to match the delays they were encountering with FSED, the fixed price options would have expired and Congressional funding for aircraft procurement would have either been eliminated, reduced, or substantially delayed, making the program vulnerable to further funding cuts or possible termination.

<sup>33</sup> Although relatively new, the introduction of event based contracting to the C-17 was viewed with approval. In later testimony before the Senate Armed Services Committee, Ms. Nancy Kingsbury of the GAO would state "...*event-based contracting ...is a very positive aspect of this program.*"

U.S., Congress, Senate, Committee on Armed Services, Department Of Defense Authorization For Appropriations For Fiscal Year 1991, 101st Congress., 2nd sess., 1990, pp. 340-341.

linked to demonstrated progress and "event complete" program milestones.<sup>34</sup>

Under this special provision, the Lot 2 LRIP decision was now tied to the completion of the December 1988 Mission Computer Critical Design Review (CDR); and the Lot 3 LRIP award occurred at T-1 assembly complete, with T-1 assembly complete specifically defined to occur when it...

*"...moves out of the vehicle assembly area and the C-17 contracting officer for the program office determines that any remaining assembly work can be completed without significant disruption to planned ground and flight test efforts."<sup>35</sup> <sup>36</sup>*

The award of all subsequent long lead and LRIP contract options - Lots 4, 5, and 6 - were linked to a similar series of events (Atch 3).

While contract restructuring gave DAC some temporary breathing room, it added substantial technical and cost risk to the program. The three year slip from July 1987 to August 1990 in T-1 delivery and first flight caused a dramatic increase in program concurrency and virtually eliminated the 34 month

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<sup>34</sup> While aircraft production decisions were now linked to the completion of specific events, the event complete contract modification did not change the January long lead production decision points. Every January, long lead contracts for the next production lot were placed in order to protect the long term production schedule and to keep second and third tier vendors qualified and available to produce needed components.

<sup>35</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," Appendix A - C-17 Chronology, April 21, 1993, p. 1.

<sup>36</sup> T-1 "assembly complete," now scheduled to occur in January 1990, meant the vehicle had completed final assembly and was ready to begin the approximate 6 months of ground system testing and checkout required prior to first flight.

separation that had originally been envisioned between the T-1 and P-1 milestones.<sup>37</sup> It also complicated the entire accounting process and made it extremely difficult for both the Air Force and DAC to accurately track and allocate FSED and production charges. Cost allocation and program concurrency would soon become areas of even greater concern as further delays would magnify the impact the "event complete" contracting clause would have on the program.<sup>38</sup>

## 1989: PROBLEMS ACROSS THE BOARD

As 1989 approached, DAC continued to have trouble meeting program milestones. Struggling to overcome the cumulative pressures of concurrency, DAC's inability to resolve nagging engineering and management problems caused a six month delay in the December 1988 Mission Computer CDR.<sup>39</sup> As

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<sup>37</sup> Laid out to avoid production and development concurrency, the C-17 program now faced the troubling and expensive prospect of building long lead parts and production aircraft with little more than half the FSED engineering data packages complete.

<sup>38</sup> Since the contract now contained a mix of "schedule driven" long lead and "event complete" LRIP milestones, any delay in an "event complete" milestone now meant DAC would have to corporately finance the start of long lead and LRIP production activities in order to hold the overall production schedule and maintain their production base.

<sup>39</sup> At the completion of CDR, an anonymous "hotline" complaint was received claiming the CDR had not been successfully completed. Although the call was later deemed to be unsubstantiated, it triggered the first of many DOD IG and General Accounting Office (GAO) investigations and resulted in the development of a written agreement between DAC and the

the first "event complete" milestone under the most recent contract restructuring, the CDR slip now meant DAC would have to corporately finance the start of Lot 2 production. The original LOGO clause stipulated DAC had to continue performance on the contract as long as the government met the program funding plan. Any delay due to DAC's inability to meet an event complete milestone now required them to use their own funds if they wanted to protect the overall FSED and production schedules, stay below the contract ceiling price, and reduce their potential for loss.<sup>40</sup>

Unfortunately for Douglas, their cost, schedule, and performance problems went far beyond the C-17 program. DAC was locked into two other large fixed priced efforts for the Navy, the A-12 attack aircraft and T-45 trainer program, and both were behind schedule, over budget, and demanding constant management attention. In addition, DAC's two main commercial aircraft efforts, the MD-11 and MD-80, were also encountering significant schedule delays. Final assembly of the first MD-11s and continuing parts and worker shortages on the MD-80 production line left airline customers waiting more than

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Air Force as to what would constitute the successful completion of all future milestone events.

<sup>40</sup> Air Force Institute of Technology, "C-17, A Case Study Prepared by AFIT/LSP," Background by Colonel David L. Mastin, January 1994, Section B, p. 2.

two months for delivery and had DAC facing significant penalty payments for lost passenger revenue.<sup>41</sup>

With DAC's problems continuing to escalate, MDC introduced its Total Quality Management System.<sup>42</sup> Although well intentioned, the change only compounded an already complex program environment. Imposed without warning, this top-to-bottom company shake-up displaced nearly all middle management personnel and brought operations to a standstill. MDC literally called 5,000 workers into a paint hanger on a Friday, told them they had all lost their positions and asked them to reapply the following Monday.<sup>43</sup> With the company's organizational chart virtually wiped clean and the informal communication system which had been critical to effecting program integration now gone, DAC struggled to regain control of its entire corporation. To Colonel Tollefson, the AFPRO Commander, the company's erratic behavior amounted to "...corporate suicide...We would have to get a whole room full of

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<sup>41</sup> Bruce Smith, "Douglas Grapples With Delays In Three Transport Programs," Aviation Week and Space Technology, April 10, 1989, p. 88-89.

<sup>42</sup> One of the primary problems DAC was trying to rectify was out-of-position assembly work. Under the new TQM system, production aircraft were not to move until all of the tasks at each station were completed. In the past, aircraft with as many as 300-400 open items had moved to the next position, bogging down the assembly process with out-of-station work.

<sup>43</sup> Ralph Vartabedian, "He Dared Say the C-17 Had No Clothes," Los Angeles Times, March 9, 1993, p. D5.

*people together to find out who was in charge of various operations."*<sup>44</sup><sup>45</sup>

As the fall of 1989 approached it was becoming increasingly clear MDC's TQM program and DAC's best technical efforts could not resolve the persistent airframe assembly, mission computer, and electronic flight control problems in time for a August 1990 first flight.<sup>46</sup> Despite their continued optimism, DAC's steadily eroding credibility and continued poor performance were coming under increased scrutiny by numerous oversight committees, making near-term solutions harder to find and once again raising significant doubts about the long-term viability of the program.

## **FALL 1989: FISCAL PRESSURES & CHANGING REQUIREMENTS**

As Douglas struggled to regain the upperhand during the fall of 1989, a series of government reviews were held to determine the future of the program.

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<sup>44</sup> Colonel Kenneth Tollefson as quoted by Ralph Vartabedian, "He Dared Say the C-17 Had No Clothes," Los Angeles Times, March 9, 1993, p. D5.

<sup>45</sup> During the Defense Science Board's review of the C-17 program in December 1993, they concluded the introduction of TQM at DAC left the program at a virtual standstill for 12 months.

Office of the Secretary of Defense for Acquisition and Technology, "Report to the Defense Science Board Task Force on C-17 Review," December 1993, p. 2.

<sup>46</sup> While those close to the program saw little hope of making the current T-1 date, the Air Force was not prepared to unilaterally change it. Doing so would provide DAC with the opportunity to file a claim against the Air Force.

In late October, the Under Secretary of Defense for Acquisition (USD(A)), Mr Betti, in his role as Defense Acquisition Executive (DAE) and Chairman of the Defense Acquisition Board (DAB), completed his annual DAB review. Concluding considerable risk still remained throughout the program, he directed the Air Force to work with DAC to reset the first flight date since it appeared likely it would not occur until June 1991.<sup>47</sup> His declaration of a further delay in the T-1 delivery date and subsequent slip in IOC, led to an 11 December Air Force Chief of Staff C-17 Requirements Review which sought to re-evaluate objective versus threshold operational requirements given shrinking out-year funding (Atch 1).

Hosted by CINCMAC, General Johnson, the requirements review committee included Air Force Chief of Staff General McPeak, Mr Welch ASAF(A), and the Commanders of Air Force Systems Command (AFSC), Air Force Logistics Command (AFLC), and Air Force Operational Test and Evaluation Command (AFOTEC). Speaking on behalf of General Johnson,

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<sup>47</sup> As a result of the DAB, the Air Force was directed to submit a revised Acquisition Program Baseline (APB) reflecting new T-1 first flight (June 1991) and IOC (June 1993) dates. On 3 December, Mr Welch forwarded a memo requesting approval of a the new APB to Mr Betti "*...with the objective of enhancing program stability and controlling cost growth.*" By the time Mr Betti approved the updated APB, total FSED costs had grown from \$3.4 to \$5.4 billion in then year dollars.

Assistant Secretary of the Air Force for Acquisition, Memorandum for the Chairman, Defense Acquisition Board, Under Secretary of Defense for Acquisition, "C-17 Acquisition Decision Memorandum (ADM) Response," December 3, 1991.

Major General Frank Willis, MAC's Deputy Chief of Staff for Requirements, briefed the results of his team's two year requirements analysis and their recent September to December rescrub of more than 60 critical parameters. Concluding "...the airplane, as far as the user is concerned, is doing exactly what we have to have it do," General Willis identified a number of requirements which could either be relaxed or eliminated in order to save money and avoid the appearance of "...gold plating."<sup>48</sup><sup>49</sup> Concerned this mid-course requirements "correction" might be perceived as relieving DAC of their contractual responsibilities, General Johnson who had assumed command of MAC in September and headed the recent 90 day review was quick to say "...we honed it [C-17] to what was really needed...there was no decrease in our requirements, just a recognition of our requirements."<sup>50</sup>

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<sup>48</sup> As a result of the requirements review the following items were deleted from the baseline program; Instructor Loadmaster seat, Underfloor Smoke Detectors, Missions Computer Max Endurance Calculation, Ram Air Turbine, Data Burst, and 2nd Identification Friend or Foe Group A avionics. The maximum airdrop altitude was also reduced from 35,000 to 25,000 feet.

Major Davis, "C-17 Program Chronology, Oct 89 - Oct 90," SAF/AQQL, October 12, 90.

<sup>49</sup> Major General Frank E. Willis as quoted by John D. Morrocco, "MAC Satisfied C-17 Meets Requirements, But Fears Further Production Delays," Aviation Week and Space Technology, September 9, 1991, p. 52.

<sup>50</sup> General Hansford T. Johnson as quoted by John D. Morrocco, "MAC Satisfied C-17 Meets Requirements, But Fears Further Production Delays," Aviation Week and Space Technology, September 9, 1991, p. 52.

While the Air Force had been working to refine its operational baseline, OSD at the direction of the Secretary of Defense Cheney, was also engaged in a Major Aircraft Review (MAR) of its own. Spurred on by the realities of a crushing federal budget deficit and sweeping changes in the Soviet Union and Eastern Europe, the Bush Administration was now calling for \$180 billion in program reductions from the Pentagon's FY92-FY94 operating budget. As a result, Secretary Cheney ordered an across the board review of all major aircraft programs including the B-2 bomber, the F-22 Advanced Technology Fighter, the Navy's A-12 Advanced Tactical Aircraft, and the C-17.<sup>51</sup> While the final outcome of this latest review would not be known for some months, its significance to the future of the C-17 was clear; development programs failing to live up to their advertised cost, schedule, and performance goals would soon feel the effects of budget cuts.<sup>52</sup>

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<sup>51</sup> SECDEF Cheney's MAR marked the seventh significant study in past 10 years of the C-17. Beginning with the original C-X Task Force Requirements Analysis (1979) and the Congressionally Mandated Mobility Study (1981), the Air Force Airlift Master Plan (1983), OSD World-Wide Intra-Theater Mobility Study (1988), OSD Revised World-Wide Intra-Theater Mobility Study (1989), and Air Force Requirements Review (1989) had all revisited and confirmed the need for the C-17's capabilities.

Department of the Air Force, "Airlift and U.S. National Security: The Case For The C-17, An Air Force Perspective," 1991, p. 8.

<sup>52</sup> The MAR study group was directed to look at operational needs not currently provided by existing capabilities, how the proposed aircraft met those needs, and determine whether the current fiscal and acquisition strategies offered affordable and realistic cost, schedule, and performance goals.

## JANUARY, 1990: CONGRESS ENGAGES

As the C-17 ended its first decade in the development cycle, it again faced an uncertain future. Lengthening European warning time and ballooning budget deficits were now shifting the strategic lift focus away from rapid airlift for reinforcement toward cheaper sealift alternatives. With the C-17 continuing to suffer technical problems and schedule delays, members of Congress were becoming particularly agitated over the program's escalating costs and the Air Force's inability to put the program back on track.

Reacting to recent General Accounting Office (GAO) reports highlighting flight control, avionics, material, tooling, and weight problems; authorization conferees were considering a follow-up to their FY90 cut of \$557 million during the coming FY91 budget debates.<sup>53</sup> Having deleted two production aircraft from the FY90 request and provided only enough FY91 long lead funding for six of the first 10 C-17s originally requested, Congress began for the first time to look

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LtCol Joseph D. Rouge, "C-17 Case Study: Major Players in Defense Acquisition," NDU-ICAF, December 30, 1993, p. 8.

<sup>53</sup> An area of concern was the C-17's growing weight problem. Already as much as 2000 pounds over its production configuration, the air vehicle could not weigh more than 269,300 pounds empty and still meet its minimum requirement of flying a 160,000 pound load 2400 miles.

at opening the fixed price FSED contract and slowing the program further.<sup>54</sup>

Driving the C-17 debate throughout the FY91 budget cycle was Congressman Dingell from Michigan. As Chairman of the House Subcommittee on Oversight and Investigations, Mr Dingell was deeply involved in a number of defense procurement related investigations and had only recently "discovered" the problems at Douglas. In a well publicized January 8, 1990 letter to then House Armed Services Committee Chairman Les Aspin, he expressed his outrage over the accuracy and candor of Pentagon officials reporting on the program. Charging DOD with providing misleading data, ignoring legislative program requirements, and continuing its "...already dismal record of mismanagement," Mr Dingell concluded "...the Pentagon strategy...is to pretend that it is always too early to tell how things are going on major weapons programs until, all of a sudden, the sunk costs are too great and it is too late to stop."<sup>55</sup> Leading a growing chorus of members now in pursuit of the program, it would not be long before he would be joined by Congressman John Conyers

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<sup>54</sup> Up to this point, Congress had routinely provided full funding for the FSED portion of the contract. This was done despite the program's continuing problems because Congress did not want to jeopardize the contract's ceiling price or force the Air Force to make a costly unilateral contract change. Congress did, however, cut procurement monies associated with long lead and LRIP efforts. The original Lot 1 and 2 LRIP options had provided the Air Force with the choice of buying from 2 to 6 aircraft depending upon Congressional funding.

<sup>55</sup> Congressman John Dingell, Chairman, Subcommittee on Oversight and Investigations to Congressman Les Aspin, Chairman, Committee on Armed Services, January 8, 1990.

and many of their colleagues in taking an even greater role in shaping the future of the program.

## FEBRUARY 1990: NEW REPORTING STRUCTURE

As the C-17 program entered 1990, two organizational realignments occurred which significantly affected its management (Atch 4). The first change came in early February with the appointment of Major General Edward Barry as the first Air Force Program Executive Officer (PEO) for Tactical and Airlift Programs (AFPEO/TA). Mandated by the 1989 Defense Management Review (DMR), PEO positions were established by OSD to provide more streamlined management and control over major acquisition efforts (Atch 3).<sup>56</sup> As the person responsible for oversight, guidance, and reporting on a portfolio of 6 major development programs including the C-17, General Barry received his programmatic authority from ASAFA(A) Mr Welch, the Air Force SAE, who in

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<sup>56</sup> The positions of PEO, SAE, and DAE came about as a direct result of recommendations made by the 1986 Blue Ribbon Commission on Defense Management and were formally enacted as part of Secretary Cheney's DMR. Operating much like the Commission envisioned, the DAE and SAE positions "...function respectively like chief executive officers of a corporation and a principle corporate subsidiary...resolv[ing] major conflicts as they arise, and represent[ing] programs before most senior decision makers," while PEOs operate "...like group general managers...responsible for a reasonable and defined number of acquisition programs."

"A Formula For Action, A Report to the President on Acquisition Reform by the President's Blue Ribbon Commission on Defense Acquisition," April 1986, pp. 16-17.

turn advised Mr Betti (USD(A) and DAE) and the Secretary of the Air Force (SECAF) Mr Rice on all matters relating to acquisition management within the Air Force.

While the creation of the PEO position was completed to streamline the overall management process, it represented a major adjustment in the way SPDs functioned. Prior to the change, General Butchko had been reporting to the AFSC Commander, General Randolph via the Commander of Aeronautical Systems Division (ASD), Lieutenant General Loh. And although his boss had now changed, he was still dependant upon both ASD and AFSC for manning, administration, and functional staff support. While this new organizational structure had little effect on DAC's day-to-day activities, it fundamentally changed the Air Force's mode of operations (Atch 4). By eliminating the Air Force's senior acquisition general officer from the normal program reporting chain, a huge leadership void and a great deal of uncertainty were created. With a new organizational structure now in place, the issue of who would ultimately be held responsible and accountable for all ASAE and DAE programmatic and policy decisions made throughout the life of a development program was now in question.

In addition to the establishment of PEOs, the SECDEF in early February

also directed the July 1, 1990 realignment of the entire network of Service owned and operated Plant Representative Offices (PRO). PROs had been established to provide on-site government surveillance of contractor performance and administrative contracting support. For the Air Force and C-17 program, this new direction meant the AFPRO at Douglas's Long Beach production facility would soon transition to a Defense PRO (DPRO) and General Butchko's principle agent for on-site contract actions, Mr Nowicki, the Administrative Contracting Officer (ACO), would no longer report to AFSC via the Air Force's Contract Management Division (AFCMD), but instead to the newly created Defense Contract Management Command (DCMC) within Defense Logistics Agency (DLA).<sup>57</sup>

Although the creation of DCMC was financially beneficial and functionally transparent (the ACO would still perform the same administrative actions as before), the new reporting structure had clearly made General Butchko's program management job much more difficult. With DPRO officials no longer clearing their assessments of contractor performance through AFSC headquarters, Col Tollefson, who was now in Mr Betti's direct reporting chain,

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<sup>57</sup> The Administrative Contracting Officer (ACO) was a key player in the day-to-day execution and oversight of the program. Resident within the contractor's facility, the ACO through specific authority delegated to him by the SPO's Principle Contracting Officer (PCO), served as SPO's primary agent for product acceptance and disbursement of government funds.

quickly became OSD's principle source for program status and information.<sup>58</sup>

These separate and independent reporting chains, where two sources of program information did not come together until Mr Betti's USD(A) office, soon placed General Butchko and Colonel Tollefson in a highly confrontational relationship, one that would become more tenuous as the DAC's situation worsened.

## SPRING 1990: SCALING BACK

On the April 26, 1990 Secretary Cheney announced a new buy profile for the C-17. Testifying before Congress, he laid out the results of OSD's recently completed Major Aircraft Review. Repeating his earlier comments about how the changing situation in Europe and break-up of the Warsaw Pact had radically altered the original strategic requirement to rapidly reinforce NATO, he recommended reducing the Pentagon's planned C-17 buy from 210 to 120 aircraft. Stating the additional warning time made the European reinforcement argument no longer valid, Mr Cheney did argue for continuing the program given the reduced US troop presence overseas and the urgent need to replace the

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<sup>58</sup> According to LtCol Lockhart, "Mr Betti and many of the OSD staffers used to personally call Colonel Tollefson to request program status information or to check the accuracy of the information either the SPD, PEO, or DAC had provided. These sometimes daily calls soon became a source of great agitation between SPO and DPRO personnel, and eventually served to undercut the credibility and authority of the SPD."

Interview with LtCol Greg Lockhart, National Defense University - Industrial College of the Armed Forces, Ft McNair, Washington D.C., January 1995.

aging C-141 fleet.<sup>59</sup>

The impact of Mr Cheney's proposed changes were dramatic. Not since the original 1981 mobility debates had the program been so significantly realigned. By cutting the fleet from 210 to 120, reducing the number of FY91 production aircraft from 6 to 2, and delaying full rate production until 1994, DOD had netted a total program savings of \$11.9 billion, with \$1.04 billion coming in FY91 and \$4.156 billion over the FY90-94 Five Year Defense Plan (FYDP).<sup>60</sup> These near term cost savings, however, would be expensive as the reduced production run increased the C-17's per unit price from \$200 to \$250 million.

Although the final OSD numbers had not fully been reviewed by the Air Force, the SECDEF in his statement to Congress did announce the Air Force would be afforded the opportunity to review the cost methodology of the MAR profile. The debate, however, was academic. With the SECDEF's cost savings

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<sup>59</sup> Built in the early 1960s, the C-141 was fast approaching the end of its 30,000 hour useful life.

<sup>60</sup> The cornerstone of Mr Cheney's announcement was the combining of FY90 and FY91 LRIP buys to minimize the impact on the DAC workforce. If the six aircraft (4 in FY90 and 2 in FY91) had been ordered separately, the production workforce at DAC would have increased to about 3600 in early 91, plummeted to about 1000 in the last quarter of 92, and spiked up again to 3500 in 1995. By combining the orders the peaks and valleys were limited to around 3000 and 2000 workers and DAC did not have to go through the painful process of retraining its workforce and requalifying vendors.

plan now public, the Air Force was told to find production and buy profiles which stayed below the SECDEF's numbers, capped production at no more than 18 aircraft per year, and restructured the current out-year buy profiles of 12 in FY92, 24 in FY93, and 29 for FY94 through FY99.<sup>61</sup>

## SUMMER 1990: GROWING EAC & DWINDLING FSED FUNDS

While the SPO began preparing for yet another round of program restructuring as a result of the MAR decision, by May 1990 it was becoming increasingly clear both cost performance and funding were turning "red," and DAC's internal Estimate At Completion (EAC) was no longer realistic.<sup>62,63</sup> On May 24, 1990 Mr Nowicki notified DAC they needed to either revise their EAC

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<sup>61</sup> Shortly after Mr Cheney's announced cuts, the Senate Armed Service Committee also moved take advantage of the disintegrating Warsaw Pact by ratifying a fly-before-buy initiative for all development programs in an attempt to reduce concurrency. Saying "...*the Pentagon can now afford to take the time to get it right the first time*," the Senate imposed the rule in order to reduce risk and save additional near term money.

David A. Bond, "Congress Cites Fly-Before-Buy Rule to Stretch Out Aircraft Programs," Aviation Week and Space Technology, August 13, 1990, p. 28.

<sup>62</sup> DAC's contract required the submission of an annual EAC and monthly Cost Performance Reports (CPR). The EAC and the CPRs provided the SPO, DPRO, SAQ/AF, and OSD with insight on how well DAC was performing to its cost baseline. EACs, monthly CPRs, quarterly Contract Funds Status Reports (CFSR), and DAC's internal cost reports all had to reconcile. Each EAC was reviewed by OSD and formally reported to USD(A) via quarterly Defense Acquisition Executive Summaries (DAES).

"Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Section 2, Administration of Contract Financing, p. 20.

<sup>63</sup> "Declaration of Lieutenant General Edward P. Barry, Jr.," April 1993, pp. 10-11.

or revalidated their existing one.<sup>64</sup> Mr Nowicki had become increasingly concerned that the \$5.9 billion EAC he was using to make progress payments was understated and needed to be revised upward.<sup>65</sup> For DAC, a significant upward adjustment in their EAC would cause them to exceed the contract's \$6.56 billion ceiling price, result in lower progress payments, and formally place them into a loss position.

Bolstering Mr Nowicki concerns were an April 16 handshake agreement between General Butchko and DAC on a new \$6.737 billion EAC, and a 28 March memo written by Ms. Eleanor Spector, the Deputy Assistant Secretary of Defense for Procurement, restating DOD's policy on overceiling EAC progress payments. In her memo, Ms. Spector noted that once a contractor exceeds the contract's ceiling price, future progress payments should be reduced to reflect a portion of the expected loss. For DAC, whose flexible progress payment rate was already at 99% of the recognized costs incurred, an over ceiling condition meant an immediate reduction in the amount the government would pay for

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<sup>64</sup> DAC's EAC problems first began to surface during a March 7 briefing to the Mr Betti and the Major Aircraft Review Steering Committee. The MAR committee was briefed by DAC that their total contract cost to the Air Force was "at ceiling." EAC and work-plan correlation actions were also listed as cost-control topics.

Col Courington, "C-17 Chronology," March 1993, p. 2.

<sup>65</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Appendix H - Statement of Timothy M. Nowicki, May 8, 1992.

newly completed work. And since the \$6.737 billion EAC General Butchko had negotiated with DAC exceeded the contract's \$6.56 billion ceiling price by nearly \$200 million dollars, Mr Nowicki was concerned he had not been applying the correct payment rate or if necessary, loss ratio factor when funding the contract.<sup>66</sup>

On June 8, in response to Mr Nowicki's request, DAC raised their EAC to \$6.41 billion and was subsequently paid progress payments of \$205 million on June 21 and \$217 million on July 19. Although the \$6.41 billion EAC varied substantially from the \$6.737 agreed to on April 16, Mr Nowicki accepted DAC's new estimate on an interim basis until a more in-depth formal analysis could be completed.<sup>67</sup> Tentative approval of DAC's new EAC, however, did not resolve the lack of RDT&E funding issue that was now affecting the program. DAC's July progress payment had depleted all the

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<sup>66</sup> "The loss ratio factor reduces actual payments to the extent they are expected to exceed the contract ceiling price. For example, the C-17 FPI contract had a [FY91] ceiling price of \$6.65 billion and the EAC increased to \$7.1 billion (450 million loss). The loss ratio factor was simply \$6.65B divided by \$7.1B, or 93.1%. This figure was then applied to the total costs eligible for progress payments which gave the recognized costs for progress payments ( $93.7\% \times \$4.8B = \$4.5B$ ). At the time, DAC's flexible progress payment rate was 99%, therefore it's  $99\% \times \$4.5B = \$4.45B$ . If the amount previously paid to DAC had exceeded \$4.45B then DAC would have owed the government the difference."

LtCol David Mastin, "C-17 Issues and Concerns," ICAF Executive Research Project, 1993, pg. 18.

<sup>67</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Appendix H - Statement of Timothy M. Nowicki, May 8, 1992.

remaining FY90 FSED program funds, meaning any further FY90 FSED effort could not be paid for until October 1990 when the new increment of FY91 funding was due. This shortfall in FSED funding was caused by an actual expenditure rate which far exceeded DAC's forecasted rate, and was further compounded by the inability of DAC and the Air Force to agree upon the proper segregation of recurring and non-recurring engineering and production costs.<sup>68,69</sup> As a result, Mr Nowicki directed DAC to try to segregate their costs which were eligible for progress payments into three specific categories; FSED, Lot 1, and Lot 2.<sup>70</sup> Although FSED funds were depleted, cost segregation would permit the ACO to continue paying DAC for Lot 1 and 2 production costs incurred during August and September.

In a parallel effort toward resolving the FSED funding problem, the SPO suggested on July 25 that DAC review their cost accounting system to ensure they had correctly allocated production and FSED charges.

*"[T]he SPO believed the transition point from nonrecurring*

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<sup>68</sup> Although the contract required DAC to segregate FSED and production costs, the contract did not address the proper method for segregating and allocating these costs. Since contract formation, DAC and the government repeatedly struggled, but failed to come to agreement over how to segregate non-recurring and recurring engineering costs.

<sup>69</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Memorandum from Reviewing Official, p. 38.

<sup>70</sup> Col Courington, "C-17 Chronology," March 1993, p. 4.

*to sustaining (engineering) was happening earlier than DAC was accounting for in its current practices. The SPO based its suggestion on AFSC/AFLC Pamphlet 800-15, 'Contractor Cost Data Reporting,' which allowed the use of '90 percent engineering drawing release date' when no other reasonable transition point can be used. Therefore, if DAC met the '90' complete condition, it could transition to sustaining engineering earlier than previously anticipated. Thus some of the charges which were currently being applied against the FSED effort could be charged to production efforts and consequently paid for out of the fully funded procurement accounts. More importantly, because the development and production efforts were on the same contract, previously paid FSED charges could be "journaled" to production accounts. This bookkeeping exercise, if approved, would result in FSED accounts being credited and the production accounts being debited by the same amount. Thus, the RDT&E shortfall which started in July would be alleviated and payments could resume after the EAC issue was resolved."<sup>71</sup>*

While DAC began a detailed review of its accounting system, a joint DPRO / SPO team conducted a two day technical analysis of DAC's revised EAC. Concluding the EAC was based on unrealistic assumptions and was not traceable to specific cost accounts, Mr Nowicki notified DAC of his intent to withhold all future progress payments until supportable and segregated EACs for FSED, Lot 1 and Lot 2 were presented.<sup>72</sup> Caught by surprise, DAC's Controller immediately contacted Colonel Tollefson to discuss the impact of Mr Nowicki's

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<sup>71</sup> LtCol David Mastin, "C-17 Issues and Concerns," ICAF Executive Research Project, 1993, pg. 13-14.

<sup>72</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Appendix H - Statement of Timothy M. Nowicki, May 8, 1992.

decision to stop payment. DAC was incurring \$815,000 per month in interest expenses on the \$109 million in progress payments now owed by the government. Requesting immediate processing of the August 1990 payment, Mr Vogeding made it clear any further delay in program funding would jeopardize Douglas's ability to perform.

## FALL 1990: DAC THREATENS TO STOP WORK

With DAC and the DPRO now meeting almost daily to resolve the program's funding crisis, on 30 August John McDonnell, Chairman and Chief Executive Officer of McDonnell Douglas Corporation, arrived in Washington D.C. to meet with Deputy Secretary of Defense Donald Atwood (DEPSECDEF), OSD General Counsel Terrence O'Donnell, and Mr Welch to discuss his near term need for cash and the need for progress payments on the A-12, T-45, and C-17 program. Stating he was concerned about a company wide \$900 million shortfall by year's end, Mr McDonnell said he believed DOD had the ability to provide progress payments if it were "...willing to overrule some of its specialists."<sup>73</sup> Noting Mr Atwood responded positively to his request for help and "...was quite interested in our pp [progress payment] problem," Mr

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<sup>73</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Appendix G - Mr John McDonnell's meeting notes, p. 1.

McDonnell continued his lobbying efforts and over the next two weeks met with Mr Betti, again with Mr Welch, and twice with Assistant Secretary of the Navy (RD&A), Mr Gerald Cann to discuss the seriousness of MDC's progress payment problem.<sup>74</sup>

On September 4, Brigadier General John Nauseef was tasked by Mr Welch to assemble a Cost Performance Review Team for evaluating DAC's cost performance problems. This tasking arose because OSD was concerned about the personal entreaties by Mr McDonnell and the serious deterioration of DAC's cost performance as highlighted by General Butchko and General Barry in their August 30, 1990 DAES Report.<sup>75,76</sup> Chartered to look at:

- *The cost performance and validity of the EAC and if DAC's management was using the data.*
- *The financial and cash flow position of MDC.*
- *The legal issues associated with the program.*<sup>77</sup>

General Nauseef was supported by Mr Gary Christle from OSD(A), Mr George

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<sup>74</sup> Ibid., p. 1.

<sup>75</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Section 2, Administration of Contract Financing, p. 16.

<sup>76</sup> During the period of August 30 to October 19, Mr McDonnell either met individually or collectively with Mr Atwood - DEPSECDEF, Mr Betti - USD(A), Mr Cann - ASN(RD&A), and Mr Welch ASAFA(A) nearly 20 times to discuss MDC's financial problems and the need for immediate progress payments.

<sup>77</sup> LtCol David Mastin, "C-17 Issues and Concerns," ICAF Executive Research Project, 1993, pg. 14.

Miller, a retired Air Force Major General working as a consultant for the Air Force, and Ms Darleen Druyun, AFSC Principle Assistant to the Deputy Chief of Staff.

While the Cost Performance Review Team evaluated DAC's current situation and prepared for visits to the McDonnell Douglas Corporate headquarters in St Louis and DAC's facilities in Long Beach, DAC kept up the pressure for payment. Citing Anti-Deficiency Act violations, allocation of cost overruns among contract CLINs, and the mixing of test and production aircraft as reasons for resumption of payment, DAC notified Mr Hixenbaugh they reserved the right to stop work if progress payments were not forthcoming to cover the \$110 million per month in costs they were now incurring.

Air Force legal review of DAC's payment demand determined they had incorrectly interpreted contract clauses and had no basis on which to make a claim, but did indicate they saw no legal impediment to rejournaling charges between FSED and production accounts if warranted and appropriate, subject to the scrutiny and approval of the DPRO and Defense Contract Audit Agency (DCAA).<sup>78</sup> With this response in hand, DAC finished their accumulated cost

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<sup>78</sup> "Generally, it is the DCAA's responsibility to ensure contract costs are properly accumulated and billed in accordance with Federal Acquisition Regulations, Cost Accounting Standards, and the contract terms and conditions."

"Audit of Contractor Accounting Practice Charges for C-17 Engineering Costs, 92-

review and briefed the SPO on September 25 of their proposal to use the AFSC Pamphlet criteria and 90% engineering drawing release point as the basis for declaring where nonrecurring ends and recurring begins. The SPO forwarded their journaling proposal to DCAA for review and consideration.

In the meantime, General Nauseef's Cost Performance Review Team returned to Washington to brief Mr Betti. On October 2, to an overflow crowd of OSD, Air Force, Army, Navy, SPO, and DPRO personnel, General Nauseef provided the results of the team's recent trips to St Louis and Long Beach to review MDC's finances and to meet with Colonel Tollefson and Mr David Ganus, the Primary ACO (PACO) about DAC's current EAC and payment needs.<sup>79</sup> Addressing C-17 cost performance, MDC's financial condition, factors limiting progress payments, sources of funding, and the impact these issues had on MDC cash flow, General Nauseef showed that C-17 cost performance was deteriorating, the overrun rate was continuing to grow, but the company was not

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046," February 13, 1992, Exhibit 8, p. 51, cited in "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Section 2, p. 44.

<sup>79</sup> During the meetings in Long Beach, Colonel Tollefson and Mr Ganus determined a partial progress payment could be made, but only if Mr Nowicki, who was not present at any of the meetings, believed program progress had been made and DAC's latest EAC was technically acceptable.

in any danger of going bankrupt.<sup>80</sup><sup>81</sup> He also discussed the new \$6.56 billion EAC DAC had provided the government during his September 29 meetings. DAC's new EAC of \$6.56 billion was now equal to the then contract ceiling price. As discussions quickly turned to whether approval of a partial progress payment was possible, Colonel Tollefson indicated to Mr Betti that payment would be appropriate and neither General Henry, the DCMC Commander, nor anyone else present raised an objection. In a smaller second meeting, Mr Betti continued discussing the payment issue and decided to direct General Nauseef to brief the McDonnell Douglas Staff.<sup>82</sup> After this second meeting, General Henry telephoned his staff to authorize funds release.<sup>83</sup>

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<sup>80</sup> "Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990," Department of Defense, Office of the Inspector General, January 1993, p. 43.

<sup>81</sup> According to General Barry; *"One of DAC's major problems was that they had a ramp full of completed MD-11 jetliners which the airlines couldn't take delivery of until such time as the Federal Aviation Administration [FAA] certified the MD-11 for commercial service. Since the airlines only put down a 25 percent deposit, DAC was paying a lot of interest to finance the construction costs associated with these aircraft."*

"Declaration of Lieutenant General Edward P. Barry, Jr.," April 1993, pp. 20.

<sup>82</sup> General Nauseef, who was not present at the second meeting with Mr Betti, had already departed the Pentagon to return to Andrews AFB. At Mr Betti's request, he returned to present his earlier briefing to the McDonnell Douglas Staff via video teleconference.

"Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Section 2, Administration of Contract Financing, p. 18.

<sup>83</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Section 2, Administration of Contract Financing, p. 18.

The decision to resume payment resulted in the release of \$81 million for Lot 1 and 2 production work. Although he had not fully evaluated DAC's latest EAC, Mr Nowicki concluded "...that payment of the \$81 million of production costs billed for July and August 90 fell within the bounds of risk to protect the government from overpayment."<sup>84</sup><sup>85</sup> With payment 97 now made, he turned his attention to formally evaluating DAC's new EAC and reviewing their on-going effort for rejournaling FSED and production costs.

On 31 October, DCAA completed its analysis of DAC's journaling proposal and took no exceptions to the accounting change. DCAA, however, did indicate the retroactive nature of the proposed change from December 1988 to September 1990 did not technically comply with current Cost Accounting Standards, "...but since the change did not affect the ultimate price of the contract, it was acceptable for the Lot 1 and 2 efforts."<sup>86</sup> With rejournaling approved, Mr Nowicki concurred with DAC's transfer of \$171 million from

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<sup>84</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Appendix H - Statement of Timothy M. Nowicki, May 8, 1992.

<sup>85</sup> DAC requested payment of \$316.8 million, the total amount due for FSED, Lot 1 and 2. With FSED funds depleted only Lot 1 and 2 efforts could be considered for payment. Mr Nowicki was concerned that DAC's latest EAC was again understated, however, he felt the \$500 million rough order of magnitude (ROM) understatement to be sufficient enough for a risk assessment to determine if payment was warranted.

<sup>86</sup> LtCol David Mastin, "C-17 Issues and Concerns," ICAF Executive Research Project, 1993, pg. 17.

FSED to production accounts, but because a formal analysis of DAC's latest EAC still found it to be understated, he refused to authorize payment.

Reaching a resolution on DAC's EAC continued to be a problem. Because there were a number of recognized methodologies for computing an EAC and each yielded a different result depending on the assumptions, General Nauseef proposed a combined alternative EAC of \$7.1 billion be used. DAC agreed.<sup>87</sup> Computed using an average of EACs from DAC, the SPO, the DPRO, and an OSD standard, this new value relied on monthly updates of forecasted expenditures. While accepting this approach solved DAC's current problem of continued progress payments, it placed the program and Douglas in an overrun condition. As a result, when the loss ratio factor was applied to the November progress payment, DAC receive only \$59 million of their \$387 million dollar

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<sup>87</sup> Although DAC accepted the new EAC, they continued to espouse optimism until early 1992, saying they would stay within the contract's ceiling price of \$6.56 billion. Mr David Swain, vice president and general manager for the C-17, in the face of rising EACs claimed throughout the fall of 1991 that DAC would lose no more than \$150 million on the development of the C-17 and the first two production lots. Saying the company would spend about \$7 billion on the original contract, he believed \$200 million in yet to be filed claims against the government would partially offset any loss. Colonel Tollefson would later remark about DAC's continued optimism, saying; "*It was like dealing with an alcoholic....They were in self-denial.*" In April 1992, DAC raised their own EAC to \$7.39 billion.

"Several Thousand Layoffs Feared if Congress Cuts C-17 Appropriation for Fiscal 1992," Aviation Week and Space Technology, September 23, 1991, p. 22.

Ralph Vartabedian, "He Dared Say the C-17 Had No Clothes," Los Angeles Times, March 9, 1993, p. D8.

Ralph Vartabedian, "GAO Says C-17 is Riddled With Computer Problems," Los Angeles Times, May 8, 1992, p. D12.

request. And any immediate relief that rejournaling may have offered was now negated by DAC's overrun condition.<sup>88</sup>

## **DECEMBER 1990: T-1 ASSEMBLY COMPLETE**

Although cost pressures had temporarily shifted the program's focus, final assembly of T-1 was well underway. Established as an "event complete" milestone during the November 1988 contract restructuring, by late fall T-1 had become the program's pivotal event representing an opportunity for DAC to liquidate \$1.65 billion. Under an agreement reach in May of 1990, the existing CLIN covering final delivery of T-1 was divided into two sub-CLINs, with assembly complete as one sub-CLIN and vehicle delivery (first flight) as the other.<sup>89</sup> A memorandum of understanding (MOU) between DAC, the SPO, and the DPRO describing a set of "target" conditions was signed June 12 and the contract modification incorporating these changes was executed on September

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<sup>88</sup> Of the \$172 million that had been charged to the FSED contract from December 1988 to September 1990 and rejournalized to production, DAC received \$148 million.

<sup>89</sup> The establishment of two sub-CLINs resulted from a series of negotiations begun in early 1990 as DAC and the Air Force worked to define an enforceable delivery schedule. The total value of the two sub-CLINs was \$1.776 billion, with \$1.651 billion or 93% of the total paid at assembly complete and \$125 million payable on delivery in June 1991.

25, 1990.<sup>90</sup>

Since moving T-1 on its own gear out of the major assembly join tool on June 30, DAC had been working round-the-clock to meet the December 31 assembly complete milestone. With interest and support in the program growing since the start of the Desert Shield build-up, DAC was adding engineers and technicians from other areas to provide expertise in software, avionics, and flight control systems. As LtCol Lockhart recalls,

*"...they were really working at making it come together. Between the workers and the inspectors the aircraft looked like an ant hill. Anybody who could bend a wrench to make it work was either standing inside it or sitting on top of it."*<sup>91</sup>

On December 21, 1990 DAC submitted its certification of T-1 assembly complete to the SPO. With paper in hand, General Butchko notified Mr Donald Yockey, the new USD(A), Douglas had reached the milestone and satisfied preconditions for award of the Lot 3 production contract. Although General Butchko, and more importantly Mr Hixenbaugh had accepted the certification, it was clear their decision had not been a popular one with the Colonel Tollefson.

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<sup>90</sup> Under the terms of the contract and MOU, DAC was to certify to the PCO all the "target" conditions had been met. Broadly written, the MOU provide for departures from the target conditions so long as they did not cause any disruptions to planned ground and flight test efforts.

<sup>91</sup> Interview with LtCol Greg Lockhart, National Defense University - Industrial College of the Armed Forces, Ft McNair, Washington D.C., January 1995.

Citing public relations as a primary factor in the SPO's T-1 decision, the DPRO Commander argued that DAC had not reached the "target conditions" as specified in the contract.<sup>92</sup> But the final acceptance decision was not his to make. Mr Hixenbaugh, who had twice rejected DAC's certificate of completion, found that all remaining assembly work could be completed without significant disruption to the planned ground and flight test program. Colonel Tollefson, who would later testify acceptance "...created an illusion of success," believed the SPD and PCO had over-stated T-1's condition.<sup>93, 94</sup> His comments, while

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<sup>92</sup> Mr Brian Kosmal, the Director of Manufacturing and Quality Assurance for the C-17 SPO and the individual responsible for defining much of the T-1 assembly complete milestone and performing the final physical inspection of T-1 prior to acceptance, later stated: "*The target condition was to serve as a guideline and provide a framework for documentation of our decision process. It was never envisioned that all the items listed would be physically completed, but rather exceptions to the 'target condition' were to be judged individually and collectively for their potential impact to subsequent ramp and flight test operations....I was convinced that the remaining assembly work could be done without disruption to flight and ground test operations.*"

"Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Affidavit of Brian Kosmal, April 1, 1993, pp. 83-6 - 83-7.

<sup>93</sup> David F. Bond, "Rushed Approval of C-17 Milestone Aided Contractor Financial Crunch," Aviation Week and Space Technology, May 18, 1992, p. 30.

<sup>94</sup> General Butchko would later testify before Congressman Conyers's Committee saying accepting T-1 "...was solely my decision, and it was based on my programmatic view that this was the right thing to do. They had progressed far enough, and I had two key reasons...One, the Douglas workforce had been working 7 days a week, 24 hours a day for several weeks in order to achieve this milestone. They needed a vacation. They also needed a morale boosting victory. The second reason was if I could get the aircraft out of position one, before they went on vacation, we could put it into the paint barn, get it painted while no one else was working, and therefore regain basically one week of schedule."

U.S., Congress, House, Committee on Government Operations, The Air Force C-17 Aircraft Program, Hearings before the Subcommittee on Legislation and National Security,

debatable, reflected the increasingly acrimonious environment which had now engulfed the program and challenged its survival; a situation which would continue to worsen as DAC, the SPO, and the DPRO entered the new year.<sup>95</sup>

## 1991: MCDONNELL'S TENUOUS POSITION

As March 1991 approached, MDC and its DAC subsidiary were under intense financial pressure. Four concurrent aircraft development programs, three of which carried fixed price contracts, were devouring huge amounts of cash. The corporation had accrued approximately \$2.7 billion in overruns, a tax deferred liability of \$1.2 billion, and \$3.3 billion in corporate debt.<sup>96</sup> With more claims pending from the early January cancellation of the \$57 billion A-12 program and access to financial markets limited, MDC went looking for help. Knowing the DPRO at McDonnell's corporate headquarters in St Louis had

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102d Congress., 2nd sess., 1992, p. 556.

<sup>95</sup> According to LtCol Lockhart, "By the end of 1990, the relationship between General Butchko and Colonel Tollefson was deteriorating rapidly. Each had an extremely strong personalities, each was convinced they had the right answer for DAC's continuing problems, and each reported what they saw from their point of view."

Interview with LtCol Greg Lockhart, National Defense University - Industrial College of the Armed Forces, Ft McNair, Washington D.C., January 1995.

<sup>96</sup> U.S., Congress, House, Committee on Energy and Commerce, Major Weapons Programs Oversight, Hearings before the Subcommittee on Oversight and Investigations, 102d Congress., 1st sess., 1991, p. 25.

concluded MDC's cash reserves were now insufficient to meet its monthly needs, Mr McDonnell sent a letter to Mr Yockey requesting an advanced payment pool of \$1 billion over two years as an alternative to bank borrowing.<sup>97</sup> Although his request was later denied, it came on the heels of the Pentagon's Cost Analysis Improvement Group (CAIG) estimate that the C-17 program could now be as much as \$2 billion over its \$6.6 billion ceiling price. The news left both senior DOD officials and members of the House Armed Services Committee looking for answers and wondering if the C-17 had become another A-12.<sup>98</sup>

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<sup>97</sup> While this request was later withdrawn, Mr Yockey did inform Mr McDonnell that DOD was not prepared to provide any unusual financing until MDC provided sufficient evidence it was taking every prudent action to cope with its cash shortfall.

U. S. General Accounting Office, "Military Airlift, Selected Events in the Development of the C-17, May 1992, pp. 12-14..

<sup>98</sup> Secretary Cheney's January 7, 1991 decision to terminate the A-12 contract for default had a devastating effect on MDC. Although General Dynamics was MDC's prime partner, MDC because it was making "headlines" with its other problem programs took the brunt of the criticism. At the time the program was cancelled, MDC & GD were approximately 18 months behind and \$1 billion overrun three years into the \$4.4 billion effort. Particular significant was the Navy's demand that MDC and GD repay \$1.35 billion in unliquidated progress payments for work that had been done, but not accepted at the time of contract termination. Both contractors requested and were granted a deferral because of concerns that repayment would place one or both in a financial condition which would endanger other essential DOD programs. The deferment decision caused Congressman Conyer's Legislation and National Security Committee to issue a subpoena to the SECDEF requesting a copy of the decision memorandum which granted the relief. His request, however, was denied as the President asserted executive privilege and instructed the SECDEF not to release the information. According to the GAO: *"In announcing his decision, the President stated that the release of these documents would inhibit the candor needed by the Department of Defense to make effective decisions and recommendations concerning national security."*

As MDC searched for a solution, DAC, the SPO, and DPRO were all moving in opposite directions. The pressures of first flight and endless program investigations had caused them to turn inward. DAC became preoccupied with limiting its losses, the SPO concentrated on first flight and delivering aircraft to MAC, and the DPRO turned to enforcing a contract which had not been updated.<sup>99</sup> This deteriorating environment became further strained as continuing technical problems prompted yet another first flight delay and the Air Force announced plans to reduce its aircraft performance requirements. With requirements changing and the T-1 first flight date now moving from June toward September, members of the Senate Armed Services Committee demanded Secretary Cheney provide an explanation.<sup>100</sup>

In late September, shortly after T-1's first flight, General Butchko was

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U.S. General Accounting Office, "Naval Aviation, Events Surrounding the Navy's A-12 Aircraft Program," May 1992, pp.4-7.

<sup>99</sup> Office of the Secretary of Defense for Acquisition and Technology, "Report to the Defense Science Board Task Force on C-17 Review," December 1993, p. 2.

<sup>100</sup> Concerned with the continued delays and what they perceived to be a reduction in operational requirements, members of the SASC directed Secretary Cheney to provide an updated list of all current and past requirements and required the Chairman of the Joint Chiefs to certify the military utility of the aircraft. Lawmakers also directed the IG to review DOD and Air Force life cycle estimates and inserted language in the authorization bill requiring the program to adhere to a modified event based contract where production contract awards for FY92 and FY93 were contingent upon the first flight of P-1 and acceptance of P-5 respectively.

Patricia A. Gilmartin, "Senate Arms Panel Wants Pentagon To Reexamine C-17's Capability," Aviation Week and Space Technology, August 5, 1991, p. 22.

reassigned, turning the program over to Brigadier General Ken Miller.<sup>101</sup> With the T-1 milestone now past, General Miller turned his attention toward the start of flight test and the completion of P-1. Members of Congress, however, were more interested in the internal OSD documents circulating around Capitol Hill that showed that not only was MDC in worse financial shape than many had thought, but Bush administration officials appeared to be taking extraordinary steps to protect the nation's largest contractor.<sup>102, 103</sup> Congressman Dingell who

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<sup>101</sup> After the T-1 milestone, General Butchko was reassigned to be the Commander, Air Force Development Test Center. General Miller, who arrived to replace him, was not unfamiliar with the program. He had been the Commander of the Air Force's West Coast Contract Management Division (AFCMD) Offices to which DAC's AFPRO reported prior to the formation of DCMC in July 1990. He had also been Col Tollefson's immediate supervisor. In addition, General Barry had also been reassigned. He left in July 1991 to become the Commander, Space and Missile Systems Center.

<sup>102</sup> With the termination of the A-12 still in the news, members of Congress were becoming highly critical of President Bush for invoking executive privilege over data pertinent to a plan devised by Mr Yockey to increase progress payments on a number of MDC programs. By advancing payment on the F-18, F-15, and other defense programs it was estimated \$300 million in cash could be generated.

Patricia A. Gilmartin, "Congress Increases C-17 Scrutiny In Wake of Reported Cost Overruns," Aviation Week and Space Technology, September 2, 1991, p. 25.

<sup>103</sup> It was later revealed that Mr Yockey, in response to Mr McDonnell's request for help, had sent a letter outlining more than a dozen measures the company should take to reduce costs and cash outlays. Items identified included; capital spending, asset sale, compensation and related overhead expenses, eliminating bonuses, cutting salaries. Mr Yockey also specifically suggested the company close its Aerospace Information Systems Division, sell real estate, stop new construction, and postpone elective maintenance. One OSD official was quoted as saying: "*It's a real eye-opener because it tells McDonnell Douglas how to manage the company from top to bottom.*" *The Office of the Secretary of Defense is telling McDonnell Douglas "how to tighten its belt and how to run the company."*

Patricia A. Gilmartin, "Pentagon, McDonnell Douglas Auditors Clash Over Firm's Financial Condition, Aviation Week and Space Technology, October 14, 1991, p. 25.

was preparing to hold hearings, told Secretary Cheney in a late August letter the C-17 contract should be cancelled for default. He complained bitterly that MDC was "...in effect being surreptitiously bailed out by the Pentagon at a level exceeding the public bailouts of Penn Central, Lockheed, or Chrysler."<sup>104</sup> Not alone in his opinion, Congressman Conyers had begun a parallel investigation into allegations of a Pentagon effort to bolster MDC's cash flow. With audit help from both the GAO and the DOD IG, both committees would soon conduct rival hearings and order even more investigations as partisan politics would come to dominate the program.

#### **SEPTEMBER 1991 - DECEMBER 1992: CONTINUOUS OVERSIGHT**

During the next 18 months, Congress would continuously audit the C-17 program to determine whether MDC and DAC had the ability to complete the effort. Testifying before Mr Dingell's committee, Mr Vander Schaaf (IG) and Mr William Reed, the Director of Defense Contract Audit Agency revealed the scope and history of the on-going investigations and audits now permeating MDC. During the two year period from 1989-1991, 7 major DOD IG

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<sup>104</sup> Robert A. Rosenblatt, "Estimates of C-17 Overruns Range Up to \$3.2 Billion," Los Angeles Times, August 27, 1991, p. D17.

investigations had been either conducted or were currently underway.<sup>105</sup> And since 1984, MDC and its subsidiaries had been involved in another 76 investigations conducted by Defense Criminal Investigative organizations covering numerous MDC programs.<sup>106</sup> Mr Reed's DCAA activity had been equally significant..

*During FY91, DCAA auditors at MDC corporate offices and major MDC components audited \$6.1 billion of incurred costs, performed 322 contract proposal reviews totaling \$8.77 billion, performed 230 progress payment reviews, and 68 post-award reviews. Other audits performed included: financial capability reviews; contract termination and equitable adjustment claims; labor accounting reviews; cost estimating, accounting, and billing system reviews; material management and accounting system reviews (MMAS); and Cost Accounting Standards compliance reviews."*<sup>107</sup>

The GAO had also been engaged in a series of reviews, completing 5 separate

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<sup>105</sup> The audits currently on-going as of October 3, 1991 were: The Audit of DOD Use of Contractor Cost and Schedule Control System Data on Major Defense Acquisition Programs, The Audit of Air Force Contracting Practices for the C-17 Aircraft Flight Test Article, The Audit of Contractor Accounting Changes Related to Engineering Costs on the C-17 Aircraft Program, The Audit of the Cost-Effectiveness of the Air Force C-17 Aircraft Program.

U.S., Congress, House, Committee on Energy and Commerce, Major Weapons Programs Oversight, Hearings before the Subcommittee on Oversight and Investigations, 102d Congress., 1st sess., 1991, p. 43.

<sup>106</sup> Ibid., pp. 43-47.

<sup>107</sup> Ibid., pp. 39, 50-51.

audits in the past three years.<sup>108, 109</sup>

In November, as the results of the latest series of audits began to come in, DCAA reversed itself on the appropriateness of rejournaling. Responding to the preliminary results of an on-going IG review, DCAA advised the DPRO to reverse \$142 of the \$172 million it had previously paid DAC. In its final February 1992 audit report, *Audit of Contractor Accounting Practice Changes for C-17 Engineering Costs*, the IG concluded the government had misinterpreted AFSC Pamphlet 800-15 guidance and inappropriately permitted DAC to redefine the transition point between recurring and non-recurring engineering costs. The report also stated retroactive cost accounting changes were prohibited by Cost Accounting Standards and that possible Anti-Deficiency

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<sup>108</sup> By this point in the C-17 program, the level of investigative and legislative oversight had grown to where auditors and investigators from the DOD/IG, GAO, DCMC, and DCAA had all taken up permanent residence at DAC's Long Beach facilities. Auditors and investigators were also descending on MDC's other major programs, including the A-12, T-45, F-15, F-18, Apache, Chaingun, Delta II rocket, Harrier aircraft, Tomahawk, and Joint Cruise Missile System.

Ibid.

<sup>109</sup> The Defense Science Board would later report that between April 1990 and December 1993, 61 separate internal program audits were completed involving hundreds of separate inquiries.

Office of the Secretary of Defense for Acquisition and Technology, "Report to the Defense Science Board Task Force on C-17 Review," December 1993, p. 10.

violations had occurred.<sup>110</sup>

While the IG's latest findings generated a significant amount of Congressional interest and debate, it did acknowledge that "...miscommunication between parties was a key factor in the problem we found."<sup>111</sup> The report also stated;

*"The individual decisions made by the Program Office, DCAA, and DPRD in allowing Douglas to make the accounting change did not consider the full impact and results of the change. Each organization based its decision on the assumptions made by others; thus, no one appeared to recognize the overall consequences of the accounting practice change."<sup>112</sup>*

Even so, these latest accounting problems provided all the justification needed to spark a flurry of follow-on IG and Air Force audits to determine whether additional violations of regulations or statutes had occurred.<sup>113</sup>

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<sup>110</sup> "Audit of Contractor Accounting Practice Changes For C-17 Engineering Costs," Department of Defense, Office of the Inspector General, Report #92-046, February 13, 1992, p. 14.

<sup>111</sup> Ibid., p. 23.

<sup>112</sup> Ibid., p. 21.

<sup>113</sup> On January 24, 1992, the IG also issued the preliminary findings of another investigation regarding the December 1990 delivery of T-1. The IG concluded that in their opinion, the Air Force inappropriately priced and approved T-1 assembly complete, thereby increasing program risk and cost since T-1 assembly complete was a prerequisite for Lot 3 award. The IG believed that by pricing T-1 as a separate CLIN and allowing DAC to liquidate \$1.65 billion in progress payments, the SPO had attempted to improve DAC's immediate cash flow situation as well as provide DAC additional relief through the award and funding of the Lot 3 LRIP contract. The IG based its conclusions on the fact that DAC had been carrying all the costs associated with Lot 3 long lead for nearly 20 months (since

## JANUARY 1993: ALLEGATIONS OF WRONGDOING

On January 14, 1993 the DOD IG issued another report, this time accusing Air Force officials of implementing a "secret" plan of action to provide financial assistance to DAC during the fall of 1990. Responding to Mr Conyers request for a follow-on review of past C-17 accounting practices, the IG completed an administrative inquiry entitled, *Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990*, (Atch 5). In this review, the IG alleged Air Force personnel made (rejournaled) \$349 million in expedited government payments that exceeded appropriated amounts, provided \$92 million in financing which exceeded the fair value of undelivered work, improperly reduced DAC's financial risk, and created an illusion of success by improperly accepting T-1 "assembly complete."<sup>114, 115</sup>

Although as part of an earlier investigation he had previously testified

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January 1989), and the sooner the Lot 3 LRIP award was made, the sooner DAC could be paid for costs already incurred. Lot 3 contract award did not occur until July 1991 or nearly seven months after T-1 acceptance and 27 months after the start of long lead.

"Audit of Contracting Practices for the C-17 Flight Test Program," Department of Defense, Office of the Inspector General, Report #92-074, April 10, 1992.

<sup>114</sup> "Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990," Department of Defense, Office of the Inspector General, January 1993, p. 4.

<sup>115</sup> Although numerous OSD officials were intimately involved in the C-17 decision making process, the IG report concluded Air Force officials had acted alone in their funding decisions.

before Mr Conyer's committee on May 13, 1992 that attempts to relieve a contractor's financial problems are "...perfectly appropriate" if they do not violate law, regulation, or sound management principles, Mr Vander Schaaf implied the actions taken by Air Force personnel during the fall of 1990 were not only illegal, but part of a secret criminal conspiracy to "bailout" MDC.<sup>116</sup> Recommending the Secretary of the Air Force take disciplinary action against General Barry, General Butchko, General Nauseef, Ms Druyun, and Mr Hixenbaugh, the IG concluded Air Force officials were guilty of everything from gross mismanagement to criminal malfeasance and needed to be sanctioned. Although highly unusual for an IG to recommend disciplinary action, the administrative nature of this review gave the IG broad latitude to investigate and recommend punishment, with no requirement to follow normal accounting or criminal investigative standards for collecting evidence or hearing testimony.<sup>117</sup>,<sup>118</sup>

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<sup>116</sup> David F. Bond, "Rushed Approval of C-17 Milestone Aided Contractor Financial Crunch," Aviation Week and Space Technology, May 18, 1992, p. 30.

<sup>117</sup> One of the major criticisms with the way the IG handle this investigation was the way evidence was collected and evaluated. Because this had been conducted as a further administrative review of three other already completed audits, the IG was not compelled to follow strict audit practices and in fact expanded the scope of the investigation beyond its original tasking. None of the principles who were charged with wrong doing were afforded an opportunity to review the final report prior to its public release. It would later be shown that many of the IG's facts were indeed not supported by referenced documents and many of the statements made by witnesses were hearsay assertions, opinions, or conclusions with no

With Air Force and senior acquisition officials crying foul over what many saw as an IG out of control, Secretary Aspin's directed the Air Force to conduct an independent evaluation of the IG's administrative inquiry.<sup>119</sup> The April 21, 1993 report (Atch 6), signed by Mr Donley concluded;

*"...that a government effort was originated at OSD level to determine whether or not monies were legitimately owed but unpaid to MDC on three separate contracts. The Review Team found no evidence to support the existence of a "conspiracy" or any illegal or improper plan. The Review Team found that the integrity of the acquisition system was not compromised, and found overwhelming evidence that the system of checks and balances functioned largely as intended."*<sup>120, 121</sup>,

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basis in fact.

<sup>118</sup> The principle witness for the IG throughout most of their administrative review was the DPRO Commander, Colonel Tollefson. At the close of the IG report, he was given a \$10,000 check by the IG for his actions in enforcing sound contract administration.

<sup>119</sup> Although SECDEF Aspin asked for an independent Air Force review, the five individuals named by the IG were literally on their own given the recent change in administrations. Mr Donley, who had been the Assistant Secretary of the Air Force for Finance and was now the acting SECAF, held little sway with Mr Aspin even though outgoing SECAF Rice had stated the IG report merely "...readdresses matters with which we've taken issue before" and had directed an "...independent review to provide a factual basis" for further Air Force action. It would be some 7 months before a new SECAF would be confirmed.

John D. Morrocco, "Pentagon Report Fault USAF C-17 Program Officials," Aviation Week and Space Technology, January 25, 1993, p. 51.

<sup>120</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Memorandum from Reviewing Official, p. 2.

<sup>121</sup> The IG in its report also concluded that USD(A) had not made any special arrangements with MDC to facilitate payments and that OSD officials emphasized compliance with acquisition regulations. The IG also stated, he viewed interaction on major programs between senior DOD officials and contractor management routine and an essential part of

The Air Force review also determined no criminal or seriously improper contractual actions occurred and all factual allegations with respect to Ms Druyun, General Barry, and General Nauseef were totally unfounded. With respect to General Butchko and Mr Hixenbaugh, even with the benefit of 20/20 hindsight, past management decisions were clearly within the range of acceptable management discretion.<sup>122</sup>

#### **APRIL 1993: SECRETARY ASPIN'S RESPONSE**

On April 29, 1993, just seven days after he received the Air Force report, Mr Aspin issued his decision (Atch 7). The SECDEF ordered General Butchko relieved of command and directed that General Barry, General Nauseef, and Mr Hixenbaugh be permanently barred from performing acquisition duties.<sup>123</sup> All administrative actions against Ms Druyun were dropped and the group's

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their responsibilities.

"Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990," Department of Defense, Office of the Inspector General, January 1993, pp. 30-31.

<sup>122</sup> "Air Force Review of the January 14, 1993 DOD IG Report on the C-17," April 21, 1993, Memorandum from Reviewing Official, pp. 2-4..

<sup>123</sup> General Butchko retired from active duty immediately. General Nauseef who was awaiting Senate confirmation of promotion to Major General also retired some 90 days later. General Barry applied for retirement and awaits Senate confirmation to retire in the grade of Lieutenant General. Mr Hixenbaugh was reassigned to non-acquisition related duties.

scheduled appearance before Congressman Conyer's committee on April 29 was cancelled.<sup>124</sup>,<sup>125</sup> While the SECDEF's actions brought immediate applause and a request for prompt Justice Department prosecutions from Congressman Conyers, the response throughout the acquisition community was one of disgust and dismay. Many viewed the SECDEF's actions as merely political scapegoating, tying his decision to comments made during a February 21, 1993 interview.

*"Asked how he intended to keep the brass in line, Aspin says it is not necessary to fire a symbolic shot at the generals. 'I think that it will come up naturally,' he says. Someone will make a big mistake. 'You don't have to force the issue. You don't have to go looking for it.'"<sup>126</sup>*

Regardless of the SECDEF's motivation, his actions "...taken to strengthen the acquisition system and to encourage its efficient operation,"

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<sup>124</sup> In his 29 April memo to Mr Donley, Mr Aspin cited all but Ms Darleen Druyun for wrong doing and punishment. Ms Druyun, however, barely escaped censure. On the evening of 27 April Mr Aspin concluded in a lengthy memo to Mr Donley that all five individuals named by the IG (including Ms Druyun) should be sanctioned and removed from their current acquisition duties. Stunned by what occurred, both current and former senior Air Force and acquisition officials engaged in a day of intense lobbying and by the afternoon of 28 April, Mr Aspin had withdrawn his original memo, edited his remarks, and reinstated Ms Druyun.

<sup>125</sup> All five individuals named by the IG were scheduled to testify on April 29, 1993 before Congressman Conyers's Legislation and National Security Subcommittee of the House Committee on Government Operations. When Mr Aspin made his decision on April 27 to take disciplinary action, he subsequently notified Mr Conyers and the hearings were cancelled.

<sup>126</sup> Secretary of Defense Les Aspin as quoted by Bob Woodward, "The Secretary of Analysis," Washington Post Magazine, February 21, 1993, p. 28.

failed to reconcile the two diametrically opposed reports.<sup>127</sup> Leaving unanswered the issue of responsibility and accountability in an operating environment where political appointees routinely make program decisions and program officials must act with discretion.<sup>128</sup>

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<sup>127</sup> Secretary of Defense Les Aspin, Memorandum for the Acting Secretary of the Air Force, "Air Force Review of the DOD Inspector General Report on the C-17 Aircraft (January 14, 1993)," April 29, 1993.

<sup>128</sup> Professor Ralph Nash, an expert in government contracting and contributor to the Air Force Review of the IG report, summarizes well this dynamic tension that now engulfs DOD's acquisition system.

*"...the exercise of discretion, by its nature, requires officials to make judgements. They should be held accountable if their judgements are bad. By 'bad' judgement we mean failure to consider all relevant facts, failure to apply generally accepted management standards, failure to explore alternatives, failure to coordinate with other personnel and to seek their views, and other similar deficiencies. We do not mean a judgement, validly made, which, on the benefit of hindsight, turns out to be disadvantageous to the Government. Nor do we mean a decision that becomes unpopular or is criticized by the public, the media, or politicians. While procurement officials should not be insulated from accountability for bad judgements, they do need assurance their actions will be evaluated fairly. Such evaluations must be removed from the political arena and be part of the on-going evaluation of performance of the individual involved."*

Ralph Nash, "The Nash & Cibinic Report," Vol 7, No 8, p. 128.

## EPILOGUE

On October 8, 1994, nearly 18 months after Secretary Aspin issued his original directive firing General Butchko and relieving General Barry, General Nauseef, and Mr Alan Hixenbaugh of their acquisition duties, the 103rd Congress completed their last related military personnel action. In a rare Saturday session, the Senate approved the much delayed retirement of General Barry at his current grade of Lieutenant General. Over the angry and vocal objections of Senator Grassley of Iowa, Senators Nunn and Warner led a floor debate overcoming attempts at a filibuster and breaking a log jam that had delayed action on General Barry's retirement package for nearly a year.<sup>129</sup> Speaking on his behalf and citing a September 30, 1994 letter he had received from Deputy SECDEF Deutch, Senator Nunn told his colleagues of Mr Deutch's plans for General Barry should his retirement not be approved.

*"I would like to make it clear if Lieutenant General Barry had not elected to retire, I would have returned him to his acquisition duties. His performance in his current position as the Commander of the Space and Missile Systems Center in Los Angeles has further*

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<sup>129</sup> Unlike the retirements of General Nauseef and General Butchko, which could be approved by the SECAF, as a Lieutenant General, General Barry's application for retirement had to be approved by the Senate. As a result, as soon as it was introduced in May 1993, he became a lightning rod for many within the Congress who were upset with the C-17 program.

*demonstrated his professionalism and dedication to duty.*"<sup>130</sup>

Dr. Deutch's comments, when viewed with those made by others within the Senate confirmation process, suggest a dramatic shift in Capitol Hill's attitude toward Mr. Aspin's earlier actions and a new found recognition of where many of the key C-17 program decisions were made. Senator Nunn commented;

*"...is important to remember that the C-17 program was a troubled program long before Lieutenant General Barry became the program executive office, and the decisions regarding cost, schedule and performance were not his. They were made at the highest levels of the Air Force"*<sup>131</sup>

General Barry's petition for retirement in the grade of Lieutenant General was approved 99 - 1.

As the Senate completed retirement hearings, the C-17 Globemaster III was achieving another significant milestone; flying its first operational airlift mission October 14, 1994 to deliver Army cargo to the Persian Gulf. The Charleston South Carolina based Air Mobility Command aircraft joined C-5 Galaxys and C-141 Starlifters in transporting troops and equipment in support of

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<sup>130</sup> Deputy Secretary of Defense John Deutch to Senator Sam Nunn, Chairman, Committee on Armed Services, September 30, 1994.

<sup>131</sup> U.S., Congress, Senate, Congressional Record, 103d Congress., 2nd sess., Vol 140 #145-Part II, October 7, 1994.

the U.S. build-up on Arabian Peninsula. Departing Langley loaded with 66,000 pounds of equipment from the Army's 7th Transportation Group, Ft Eustis, Virginia it was joined by a second C-17 which departed Charleston the next day. Although the operational deployment of C-17s marked a significant milestone event for the continued growth of the program, the real test is yet to come.

During the next six months DOD will conduct a series of operational reliability, maintainability, and availability tests on the first operational squadron which achieved IOC on January 17, 1995. In a deal brokered by Dr Deutch in early January 1994 between McDonnell Douglas and the Air Force, the Air Force agreed to take delivery of only 40 of the original 120 aircraft, leaving the final 80 unfunded pending the successful outcome of this years test program. The agreement also settled McDonnell's outstanding claims which had been building since the fall of 1990. As part of the accord, McDonnell received \$472 million to cover costs associated with actual work performed and agreed not to submit claims for more than \$1.2 billion in losses due to government delays and disruptions.<sup>132</sup> While this arrangement put the program back on solid footing, it

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<sup>132</sup> The nearly 20 page agreement between Mr Deutch and Mr McDonnell, besides settling the issue of claims, also nearly doubled the length of the flight test program, reduced a number of performance specifications, and implemented a number of low risk weight reduction initiatives. With weight growth continuing to be a problem, Air Force Mobility

did not come without significant Congressional comment, criticism, and warning.<sup>133</sup> Not yet convinced the program is totally out of the woods, Congress approved \$103.7 million to study the possible purchase of other commercial non-developmental airlift aircraft (NDAA), such as the 747 or MD-11, should the C-17 fail to make the grade this fall.<sup>134</sup>,<sup>135</sup>

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Command shifted its focus away from the original requirement to carry 160,000 lbs 2400 miles toward carrying 110,000 lbs 3200 miles. The earlier requirement had been tied to the need to airlift the M1A1 70+ ton main battle tank into Europe.

<sup>133</sup> Even with this latest program restructuring, the fifth in the past 10 years, Congress was becoming extremely disillusioned. The program which was originally supposed to cost \$41.8 billion for 210 aircraft in then year dollars, now was estimated to cost \$39.5 billion for 120.

"Quarterly Selected Acquisition Report Submission," SAF/FMCC, October 19, 1993, p. 15.

<sup>134</sup> A subtle critic of the C-17 throughout much of the program has been Lockheed Corporation, the primary builder of almost all of DOD's cargo planes in recent decades. Since winning the contract to build 50 additional C-5Bs, Lockheed has continued to offer unsolicited proposals to extend the life of the C-141 fleet. In light of renewed Congressional interest in NDAA aircraft, Lockheed submitted a \$4.4 billion proposal to extend the life of their 1960s era C-141s from 30,000 to 45,000 hours.

John Mintz, Turbulent Times for a Transport, Los Angeles Times, March 9, 1993, p. D1.

<sup>135</sup> As of April 1995, DAC had delivered 28 aircraft, the last seven of which were delivered early.

## **ATTACHMENTS**

1. C-17 CURRENT PERFORMANCE
2. C-17 GENERAL CHARACTERISTICS
3. C-17 PROGRAM SCHEDULE
4. C-17 ACQUISITION SYSTEM - FALL 1990
5. DOD/IG REPORT COVER LETTER & EXECUTIVE SUMMARY - JANUARY 14, 1993
6. AIR FORCE REVIEW OF DOD/IG INQUIRY COVER LETTER & SUMMARY - APRIL 21, 1993
7. SECDEF MEMO - APRIL 29, 1993

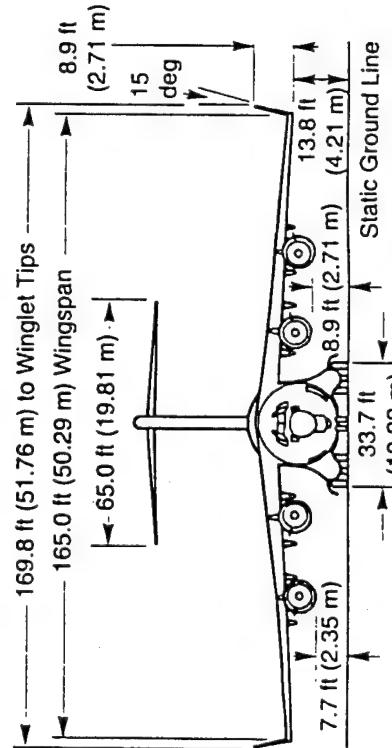
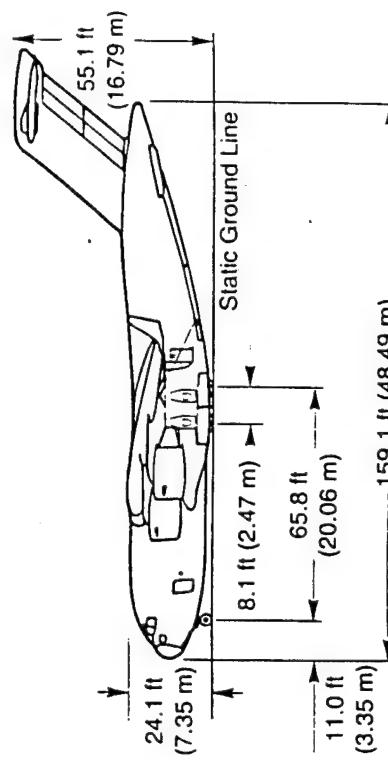
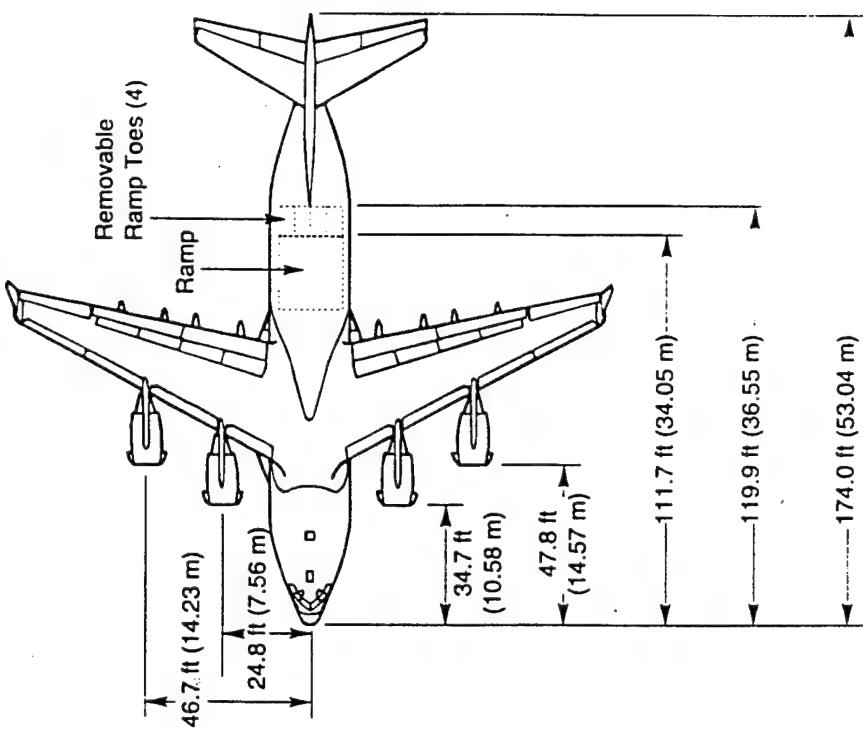
# C-17

## Current Performance

ORD PERFORMANCE	OBJECTIVE	THRESHOLD	STATUS
Payload at 3200 nm range (lbs)	130,000 lbs	110,000 lbs	123,000 lbs Current Analysis
Max Payload Landing Field length (ft)	3,000 ft @ 160K lbs	3,000 ft @ 140K lbs	3000 ft /160K Demonstrated
Backup Capability (% Grade)	2%	1.5%	Demonstrated 3+%
Turning Capability (ft for 180 degree turn)	96 ft (EAF)	90 ft (paved)	Demonstrated 80 ft (paved)
Rolling Stock/outsize cargo (# of Vehicle load configurations)	15	15	Demonstrated 15
Airdrop (# of persons/ lbs of heavy equipment/ # of CDS bundles)	102 110,000 lbs 40	102 60,000 lbs 30	102 Predicted Demo'd 110K Demo'd 30

## GENERAL CHARACTERISTICS

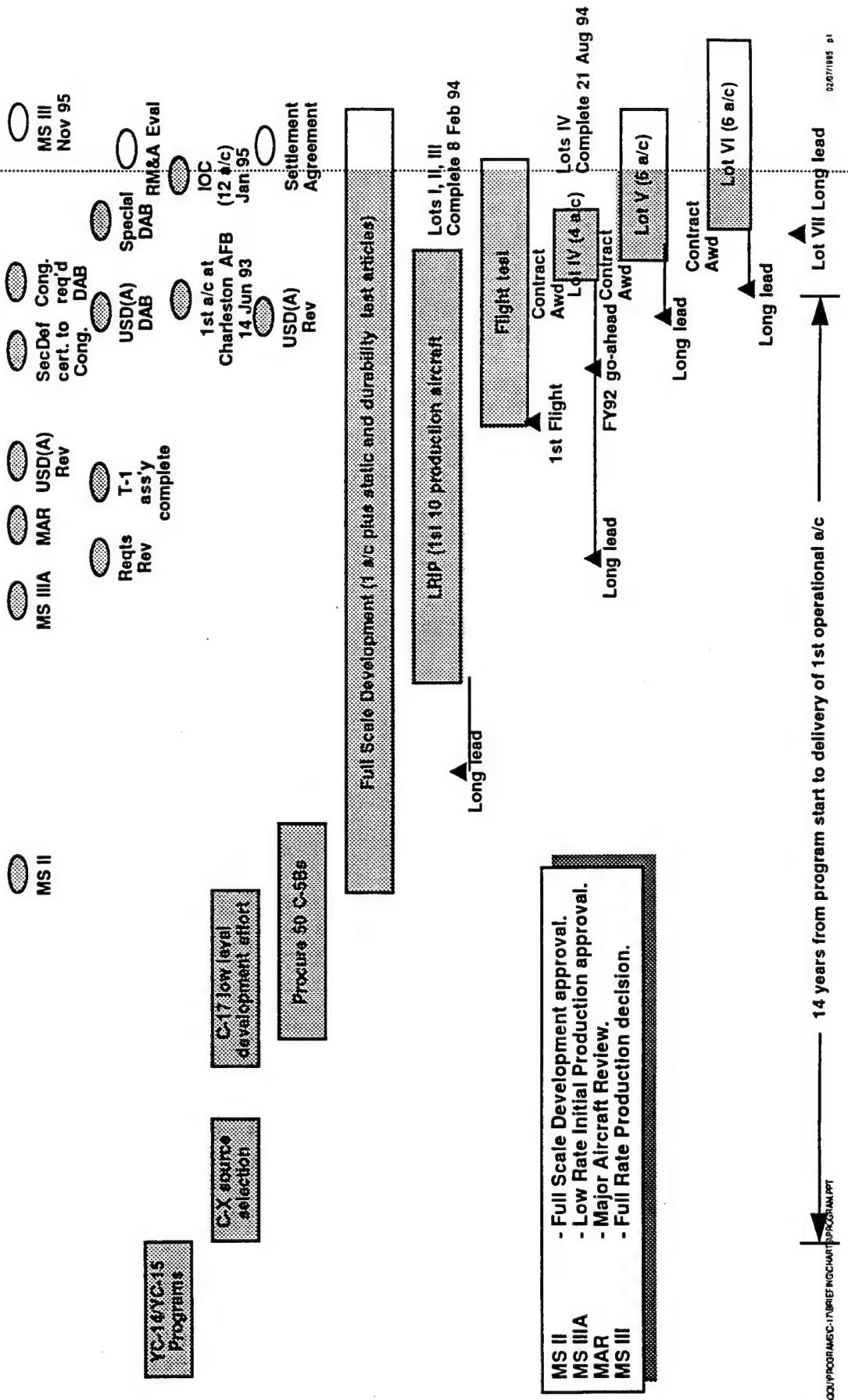
Wing Area	3,800 ft <sup>2</sup> (353 m <sup>2</sup> )
Wing Sweep	25 degrees
Aspect Ratio	7.165
Cruise Speed	Mach 0.74 – Mach 0.77
Service Ceiling	45,000 ft (13,716 m)
Max. Takeoff Gross Weight	585,000 lb (265,306 kg)
Max. Payload (2.25g)	169,000 lb (76,644 kg)
Max. Fuel Capacity	182,720 lb (82,880 kg)
Engines	F117-PW-100 (Pratt & Whitney PW2040)
Thrust	40,700 lb (181 kN)
Bypass Ratio	5.8 to 1
Fan Tip Diameter	85 in. (216 cm)
Weight (Approx.)	7,100 lb (3,220 kg)
APU	AirResearch GTCP 331-250(G) → In right main landing gear pod
Crew	Two pilots, one loadmaster



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# C-17 Program Schedule

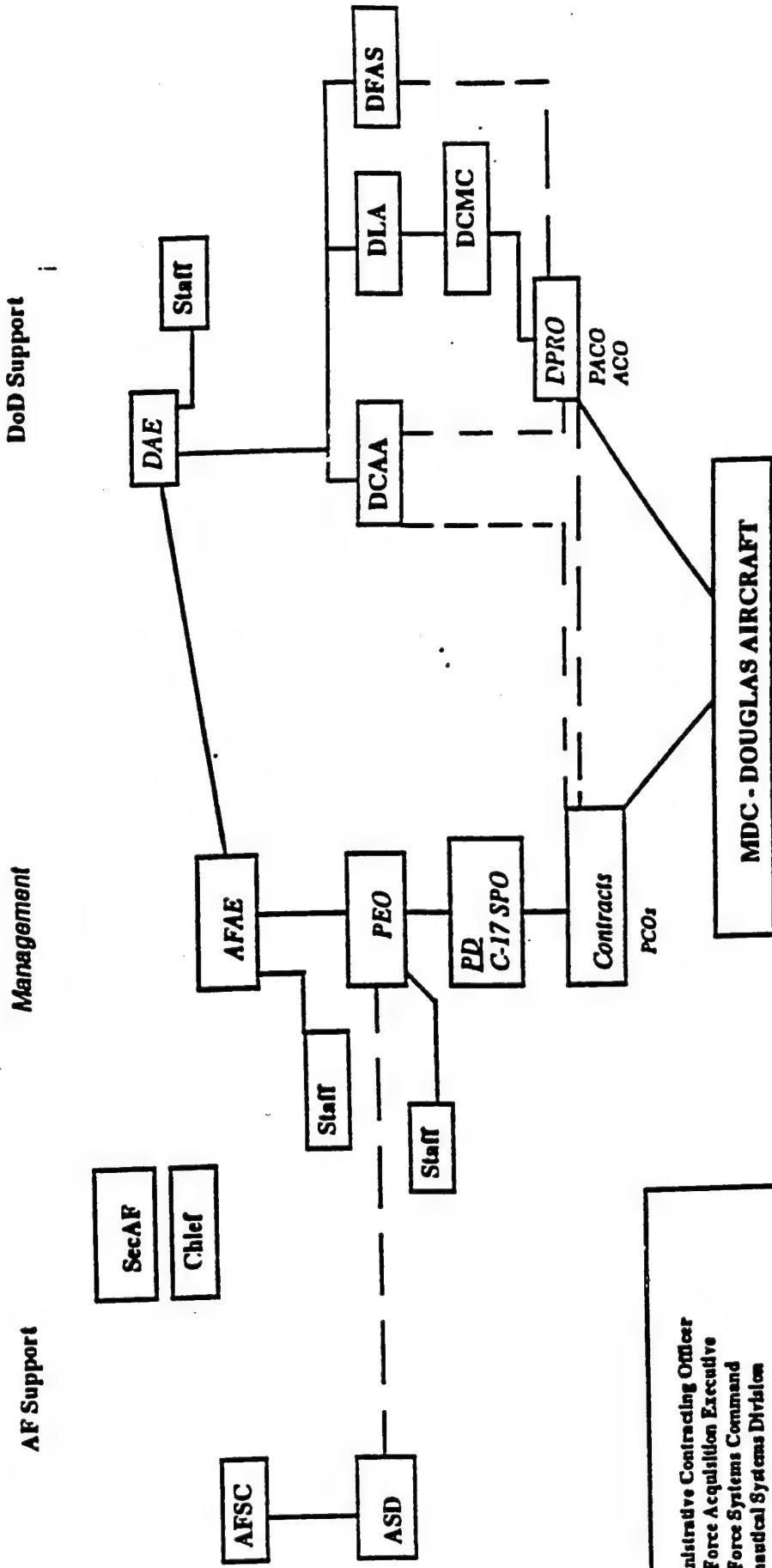
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ATCH 3

## C-17 ACQUISITION SYSTEM (Fall 1990)

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ATCH 4

ACO - Administrative Contracting Officer	DPAO - Defense Program Analysis Officer
AFAE - Air Force Acquisition Executive	DPAO - Defense Program Analysis Officer
AFSC - Air Force Systems Command	DPAO - Defense Program Analysis Officer
ASD - Aeronautical Systems Division	DPAO - Defense Program Analysis Officer
DAB - Defense Acquisition Board	DPAO - Defense Program Analysis Officer
DAE - Defense Acquisition Executive (USD(A))	DPAO - Defense Program Analysis Officer
DCAA - Defense Contract Audit Agency	DPAO - Defense Program Analysis Officer
DCMC - Defense Contract Management Command	DPAO - Defense Program Analysis Officer
DFAS - Defense Finance & Accounting Service	DPAO - Defense Program Analysis Officer
DLA - Defense Logistics Agency	DPAO - Defense Program Analysis Officer
DoDIG - DoD Inspector General	DPAO - Defense Program Analysis Officer
DPRO - Defense Plant Representative Office	DPAO - Defense Program Analysis Officer
GAO - General Accounting Office	DPAO - Defense Program Analysis Officer
PACO - Principal Administrative Contracting Officer	DPAO - Defense Program Analysis Officer
PCO - Procurement Contracting Officer	DPAO - Defense Program Analysis Officer
PPD - Program Director	DPAO - Defense Program Analysis Officer



INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
400 ARMY NAVY DRIVE  
ARLINGTON, VIRGINIA 22202 2884



January 14, 1993

MEMORANDUM FOR SECRETARY OF THE AIR FORCE  
UNDER SECRETARY OF DEFENSE FOR ACQUISITION

SUBJECT: Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990

At the request of the Chairman of the Legislation and National Security Subcommittee of the House Committee on Government Operations, we initiated an administrative inquiry on the above subject. He asked that this office review and report on a Government plan to aid the cash flow of McDonnell Douglas Corporation (MDC), to include the financial impact of actions taken and possible violations of regulations and statutes. The inquiry has been completed and the report is forwarded for your action.

The MDC considers certain information in the report to be trade secrets or confidential and proprietary information. We disagree with the MDC; however, we have afforded the Corporation the opportunity to furnish grounds on which the disclosure of the information could reasonably be expected to cause substantial competitive harm. We intend to release the report to the public unless substantial competitive harm is reasonably demonstrated by the MDC.

If you should have any questions concerning the report, please contact me or Mr. Russell A. Rau, Office of the Assistant Inspector General for Auditing, at (703) 693-0186 (DSN 223-0186). Should you desire, we are available to provide you a briefing on the results of the inquiry.

Derek J. Vander Schaaf  
Deputy Inspector General

Enclosure

Note: This report was released to the public on February 1, 1993. By letter dated January 28, 1993, attorneys for the MDC stated that "...the MDC does not object to the release of any portion of the Report." We have redacted only the names of certain individuals pursuant to exemptions provided by the Freedom of Information Act.

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Office of the Inspector General

January 14, 1993

**GOVERNMENT ACTIONS CONCERNING MCDONNELL DOUGLAS CORPORATION  
FINANCIAL CONDITION DURING 1990**

**EXECUTIVE SUMMARY**

**Introduction.** On February 21, 1992, the Chairman of the Legislation and National Security Subcommittee, House Committee on Government Operations, requested the DoD Inspector General to further review and report on a Government plan to aid the cash flow of the McDonnell Douglas Corporation (MDC) to include the financial impact of actions taken and possible violations of regulations and statutes.

**Objective.** The overall objective of the review was to examine a Government plan of action in 1990 to assist financially the MDC, and determine the financial impact of any actions taken. We also assessed compliance with applicable statutes and acquisition regulations. We expanded the review to include contract financing and administration, procurement, and program management for the C-17 Program.

**Summary of Results.** Air Force officials implemented a plan of action to provide financial assistance to the Douglas Aircraft Company (DAC), a part of MDC, during August through December 1990 to ensure the contractor continued performance on the C-17 Program. The plan of action also addressed research, development, test and evaluation (RDT&E) funding shortfalls that occurred because of premature progress payments and reduction in RDT&E appropriations. The actions centered on meeting contractor cash flow requirements without requiring the contractor to disclose the nature or extent of its financial difficulties, as required by acquisition regulations for advance or unusual payments. Expedited Government payments were made that exceeded appropriate amounts by \$349 million. Financing provided also exceeded the fair value of undelivered work by an additional \$92 million. Improper contracting actions reduced contractor financial risk on the C-17 Program by \$1.6 billion and created a false appearance of success to facilitate both the contractor obtaining additional financing through commercial sources and issuance of debt securities, and the Air Force securing additional funding from Congress.

The improper actions substantially increased Government program risk, provided premature payments to the contractor, negatively impacted first aircraft delivery, and contractually obligated the

Government to award a subsequent Lot III production contract. Award of the Lot III production contract was particularly important because it provided an additional source of funding to the contractor, and a further false indication of program success. These actions also resulted in potential violations of statutes and acquisition regulations.

Established Government oversight and internal management control processes, including the cognizant staff functions of the Under Secretary of Defense for Acquisition [USD(A)], the Defense Contract Management Command (DCMC), and the Defense Contract Audit Agency (DCAA), which would have otherwise detected or prevented those actions, were impaired by Air Force officials. These officials provided incomplete and misleading information, and, in some cases, relied on intimidation and abuse of their positions of responsibility to cause improper actions to be taken.

The Assistant Secretary of the Air Force (Acquisition) failed to demand that the contractor formally request financial assistance from the Government, including full disclosure of relevant financial information if assistance was considered necessary. The Assistant Secretary was kept informed of developments on the C-17 contract and progress payment matters by Air Force officials and the contractor. In our opinion, the Assistant Secretary should have demanded that his staff comply fully with established regulations and contract terms, and followed up to ensure actions taken did in fact comply with legal and contractual requirements. Additionally, the Assistant Secretary failed to inform completely and accurately the USD(A) of the actions planned and being taken to assist the MDC, instead permitting incomplete briefings to be made that did not solicit guidance. We believe the briefings provided an appearance of propriety and compliance with regulations and consistently maintained that false impression. Subsequently, the briefings were used to imply to others charged with oversight and administration of the C-17 contract that the USD(A) and his staff approved the Air Force position and actions.

The C-17 System Program Director (SPD) and Program Executive Officer failed to acknowledge timely, report accurately, or respond properly to the deteriorating contract cost and schedule performance on the C-17 Program. The SPD, with support from the C-17 Deputy Director of Contracting, misused their authority for procurement functions to provide an improper technical assessment to the DCAA on the propriety of an accounting practice change that was intended primarily to charge development costs to procurement appropriations. The SPD and the Deputy Director also: modified the C-17 2108 contract based on a schedule known to be unachievable; accepted inadequate consideration from the contractor for schedule slippage and established an arbitrary

contract line item to reduce contractor financial risk; delayed reduction of the progress payment rate recommended by the cognizant DCAA and DPRO offices; and improperly priced the "T-1 Assembly Complete" contract line item and executed acceptance of the line item prematurely. We believe the C-17 Deputy Director of Contracting failed to fulfill his responsibilities under the Federal Acquisition Regulation to ensure contractors receive impartial and equitable treatment.

The SPD; the Deputy Comptroller, Air Force Systems Command; and the Deputy Chief of Staff for Contracting, Air Force Systems Command improperly interfered with the process for administration of Government progress payments. They provided unsubstantiated and misleading information to senior acquisition officials and cognizant contract administration personnel at the Defense Plant Representative Office (DPRO) to cause premature payments.

**Summary of Recommendations.** We recommended that the Deputy Secretary of Defense provide full authority for selection, promotion, evaluation and removal of Program Executive Officers, Program Directors, and Program Managers to the USD(A) for all major Defense acquisition programs. We also recommended that the Secretary of the Air Force take appropriate disciplinary action against the former C-17 Program Executive Officer, former Deputy Chief of Staff for Contracting at the Air Force Systems Command, former C-17 System Program Director, former Deputy Comptroller for Air Force Systems Command, and the C-17 Deputy Director of Contracting. The Secretary of the Air Force should also direct that an Anti-Deficiency Act violation investigation be conducted on the C-17 Progress Payment Request Number 97. We further recommended that USD(A) direct that contract management functions for major Defense acquisition programs are made organizationally independent of the authority and supervision of program management officials, including Program Executive Officers, Program Directors, and Program Managers; issue policy requiring that unliquidated progress payments always exceed fair value as determined by the recognized fair value test in the Federal Acquisition Regulation; issue procedures requiring the recoupment of any excess unliquidated progress payments after loss ratio and fair value test application; and emphasize the need for contracting officers to exercise independence and objectivity in business judgement in accordance with the Federal Acquisition Regulation provisions.



SECRETARY OF THE AIR FORCE  
WASHINGTON

APR 21 1993

MEMORANDUM FOR THE DEPUTY SECRETARY OF DEFENSE

SUBJECT: Air Force Review of DoD IG Inquiry on C-17

Pursuant to Secretary Aspin's instructions of February 19, 1993 the Air Force conducted a review of the DoD Inspector General's (IG) administrative inquiry on the C-17, "Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990." This memorandum forwards the report of the Air Force Review Team, my evaluation of the findings, and actions planned to be taken.

The DoD IG's administrative inquiry contained numerous allegations concerning C-17 program management, in particular addressing the conduct of five individuals (three General Officers and two civilians) involved with the C-17 program during the last six months of 1990. The IG recommended that the Secretary of the Air Force take appropriate disciplinary action against the five named individuals, and conduct an Antideficiency investigation on C-17 Progress Payment Request Number 97. Because of the serious nature and scope of these allegations, responsibility for the Air Force Review was assigned to the Deputy General Counsel. This ensured a review both independent of the acquisition and uniformed chain of command, and sensitive to the rights of individuals and rules of evidence that would apply should any criminal activity be discovered.

The Air Force Review Team thoroughly evaluated the DoD IG Report and its support material; provided the five named individuals the opportunity to make statements and submit and review documentation; and interviewed additional personnel knowledgeable of the issues under review. The Review was organized around the main issues raised in the DoD IG report: administration of contract financing; segregation and allocation of engineering costs; and contracting practices on "T-1 Assembly Complete." The Review also responds to the results of the DoD IG Report that an Air Force "plan" existed to provide financial assistance to McDonnell Douglas Corporation (MDC), that disciplinary action be taken against

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five Air Force officials, and that a potential Antideficiency Act violation be investigated. Each of these issues was examined in detail, and the findings and conclusions are appropriately documented. They are outlined below with initial emphasis on the overall conclusions of the DoD IG administrative inquiry.

#### Findings and Conclusions:

1. Government Efforts to Assist MDC: The Review Team concluded that a government effort was originated at OSD level to determine whether or not monies were legitimately owed but unpaid to MDC on three separate contracts. The Review Team found no evidence to support the existence of a "conspiracy" or any illegal or improper plan. The Review Team found that the integrity of the acquisition system was not compromised, and found overwhelming evidence that the system of checks and balances functioned largely as intended.

Evaluation - The seriousness of the DoD IG's allegation that there was a government "plan" to aid MDC deserves special note, not only with respect to this case but also how it could potentially be interpreted across the acquisition system. Contractors routinely make special pleas and representations to program managers and senior officials concerning what they believe is owed to them by the government. It is their right, and in their business interests to do so. And, in the course of normal program management, the government also conveys requirements and demands to contractors as well. This vigorous "give and take" is by no means unique to the C-17 program.

Because it is fundamentally the responsibility of government officials to protect the integrity of the acquisition process, it is important that the oversight process not lightly question the character and judgment of senior officials and program managers upon whom we rely to make independent decisions grounded in law and regulation. This is especially so when it is the contractor, through his active intervention, who causes the misleading impression that any program actions thereafter that could remotely be construed as "favorable" are potentially being resolved on the basis of his interests rather than the best interests of the government. It is therefore important as a matter of policy that the propriety of management decisions not be judged unfairly on the basis of whether a contractor has approached a senior official who then takes lawful steps within his authority to review a particular matter, notwithstanding that the contractor will likely conclude that without his intervention no action would have been taken. Otherwise, the DoD IG allegations, if generally applied, would routinely place nearly all program managers

in the untenable position of having to "prove a negative," i.e., that their management decisions were not part of an illicit "plan" to aid their contractors. In my view, this would have a chilling and adverse impact on the acquisition system.

With respect to this case, the record is clear that the three management issues addressed in the DoD IG inquiry pre-date the intervention of MDC's CEO with senior officials, had their own program history, and received appropriate consideration by Air Force and DoD officials under applicable law and regulation.

2. Administration of Contract Financing: The Review Team found no substantiation for the allegations that criminal action or even seriously improper contractual actions occurred.

3. Segregation and Allocation of Engineering Costs: The Review Team concluded that while the contractor's segregation and allocation of certain engineering costs was improper, the events surrounding it were not part of any illicit plan to aid MDC nor did they involve misconduct meriting disciplinary actions.

4. "T-1 Assembly Complete": The Review Team found the "T-1 Assembly Complete" sub-CLIN was not part of a plan to provide improper financial assistance to MDC, and the pricing established was not adopted to confer an unwarranted financial windfall. However, the Review Team found that the broad criteria used in defining "T-1 Assembly Complete" resulted in differences of views between the SPO and DPRO that could have been avoided, if the criteria had been more clearly defined. In addition, the Team found that there could have been fuller understanding and cooperation among the government organizations in accepting "T-1 Assembly Complete." The Review Team also found no basis to support the allegation that Air Force officials impaired OSD oversight. Further, there is no evidence that Air Force officials provided false and misleading information regarding "T-1 Assembly Complete".

5. Antideficiency Investigation: The Review Team found Program Payment No. 97 to have been correctly paid by the ACO, and there was no Antideficiency Act violation.

6. Disciplinary Action: Concerning the five named individuals, the Air Force Review found no criminal misconduct or any other conduct which would merit referral for disciplinary action under the Uniform Code of Military Justice or equivalent statutory law. The Review Team found the DoD IG factual allegations

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with respect to Ms. Druyun, Lt Gen Barry, and Brig Gen Nauseef to be totally unfounded.

With respect to Maj Gen Butchko and Mr. Hixenbaugh, the Review Team found, as noted above, no criminal misconduct or any other conduct which would merit referral for disciplinary action under the Uniform Code of Military Justice or equivalent statutory law for civilians. However, the Review Team found certain management decisions were questionable. The Reviewing Official concluded these were errors of judgment and recommended I review the findings to determine whether any administrative action would be appropriate.

Evaluation - I have evaluated the findings and conclude that, while this Review creates an official record which is somewhat critical of management judgment in certain instances, it is based, as both the Review Team and Reviewing Official have noted, only on the benefit of "20/20 hindsight." Program managers must be held accountable, but when there is no criminal or other misconduct meriting referral for disciplinary action present they should be given appropriate latitude in making the decisions that are their responsibility to make. I find that the decisions or omissions of MG Butchko and Mr. Hixenbaugh considered questionable here are clearly within a range of acceptable management discretion and that no further administrative action is appropriate.

Based on the findings and conclusions of the Review Team that no disciplinary action is warranted, and my conclusion that no further administrative action is appropriate, I plan to take the following personnel actions:

- a. Lift the recusal placed on the five named individuals concerning official business with MDC or the C-17 program.
- b. Recommend to the Secretary of Defense that he advise the Senate Armed Service Committee, that based on the results of the Air Force Review Team Report, Brig Gen Nauseef's nomination for promotion to Major General should be favorably considered.

Finally, I wish to raise three issues regarding possible follow-on recommendations. First, it would be useful for the DoD IG to clarify procedures to be used in the conduct of administrative inquiries, and all audit or investigative functions,

involving criticism of the actions of named individuals. We need to be sensitive to the rights of individuals and their character and reputations, especially in view of the complex and demanding jobs we ask them to perform. In addition, clarification of policies concerning the opportunity for service and/or agency comment would also be helpful.

Second, it is important to establish the proper relationship between the findings of the DoD IG's inquiry and the Air Force Review, and the current status of the C-17 program. The events discussed here are over two years old, and the management controversies and program challenges of 1990 are, in most respects, different from those we face today. (The issue of the proper allocation of engineering and production costs will soon be resolved, and a separate Antideficiency Act investigation which has been on-going and apart from this Review will also be completed.)

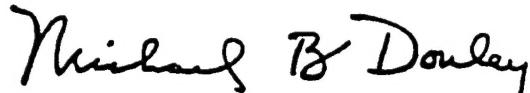
In meeting today's challenges the Air Force and MDC have reset the program and flight test baselines to remove overly optimistic planning factors. The remaining major design challenges identified to date, including range/payload, the static wing failure, wing slats and flaps redesign and the development and integration of the onboard software, all have straightforward technical fixes presently on track to be resolved. These issues have been briefed in detail to Congress. The most recent USD(A) and DAB review was in January 1993, and another is scheduled for later this month.

In sum, today's challenges are real but substantially different from those of 1990. While there are many lessons learned and systemic acquisition issues which remain to be addressed, the Air Force is convinced that the requirement for the flexible airlift capability provided by the C-17 remains valid. There are, in my judgment, no findings or conclusions in either the DoD IG inquiry or the Air Force Review that could reasonably form the basis for recommendations aimed at the current status of the C-17 program.

Third, the potential lessons learned deserve closer attention. The Air Force Review Team has generated a considerable and detailed record covering approximately one year in the life of a major acquisition program. We will preserve and make available this record for appropriate research or educational use.

I wish to express my appreciation for the thoughtful advice of your immediate staff and the Office of DoD General Counsel in the organization and conduct of this review. I also appreciate the opportunity you provided to the Air Force and the individuals concerned to respond to the DoD IG administrative inquiry.

Respectfully yours,



Michael B. Donley  
Acting Secretary of the Air Force

cc: USD(A)

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Page 6



THE SECRETARY OF DEFENSE  
WASHINGTON, THE DISTRICT OF COLUMBIA

April 29, 1993

MEMORANDUM FOR THE ACTING SECRETARY OF THE AIR FORCE

From: The Secretary of Defense  
Subject: Air Force Review of the DOD Inspector General Report on the C-17 Aircraft (January 14, 1993)

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In January, the Deputy Inspector General released a report on the C-17 program and the financial condition of the McDonnell-Douglas Corporation. The report raised questions about the management and financial integrity of the C-17 program, and specifically about Air Force actions to provide financial assistance to the Douglas Aircraft Company in late 1990.

After reviewing the Inspector General's report, I directed the Air Force to respond to the allegations. This instruction was issued in my memorandum of February 19.

Last week, the Air Force forwarded its response. I have now reviewed the report and the Air Force comments concerning allegations about five key Air Force personnel involved in the C-17 acquisition program.

In its examination of the allegations, the Air Force found no basis to believe that criminal conduct was involved in the management of the program. The facts presented to date by the Deputy Inspector General and the Air Force suggest that this finding is correct.

The Air Force also found that some management actions, while questionable, were within a range of normal management discretion. I disagree with this judgment.

The defense acquisition system operates on the principle of centralized policymaking and decentralized execution. At the heart of the system is the need for accountability at all levels. If the system is to work, then those charged with the responsibility for the management of billion dollar systems must perform to the highest standard.

MEMORANDUM FOR THE ACTING SECRETARY OF THE AIR FORCE

The story of the C-17 program reflects an unwillingness on the part of some high-ranking acquisition professionals to acknowledge program difficulties and to take decisive action. Without questioning the motivation of Air Force personnel, I must insist that program leaders understand their responsibilities to identify, early and forthrightly, significant program difficulties. Clearly, this was not done in the case of the C-17.

Consequently, I direct that you take the follow actions:

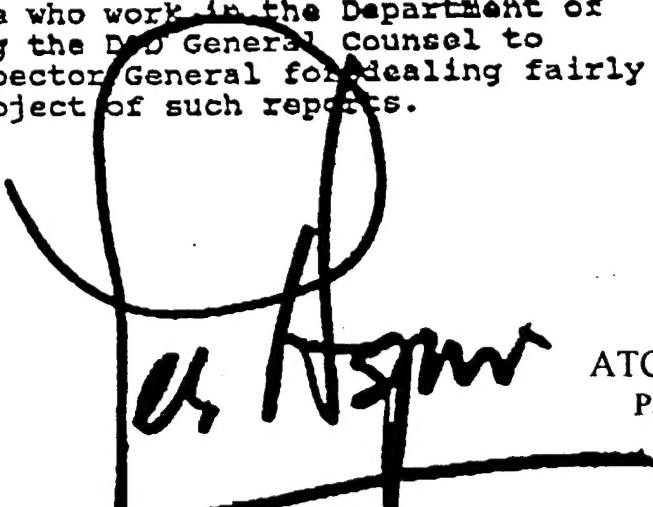
First, because the former program manager has not demonstrated the judgment necessary for senior leadership positions, he should be relieved of his current duties.

Second, the lack of judgment of four of the five individuals should be made part of their permanent record.

Third, because I have lost confidence that four of the five individuals identified in the Deputy Inspector General's report can be effective in acquisition, they should not be assigned to work in the acquisition management area.

Knowing that both civilian and military Air Force personnel in the acquisition system are dedicated, capable professionals, I trust that this community will recognize that the motivation for my actions is to strengthen the acquisition system and to encourage its efficient operation.

Finally, it is apparent that allegations of misconduct in an Inspector General report also present difficult issues of fairness for the rights of those who work in the Department of Defense. Therefore, I am asking the DOD General Counsel to develop procedures with the Inspector General for dealing fairly with individuals who are the subject of such reports.



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